

# INDUSTRIAL-ARTS MAGAZINE

Incorporating: HANDICRAFT and the ARTS AND CRAFTS MAGAZINE

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## "SYSTEMS" OF INDUSTRIAL EDUCATION

L. Day Perry, Supervisor Manual Training, Joliet, Ill.



NOT the least impediment to a liberal and rapid growth of the industrial arts has been, and is perhaps today, the so-called "systems" of industrial education. These systems are a modification of correspondence courses and aim to teach shopwork by means of a series of leaflets under the direction of an ordinary academic teacher if no trained instructor is available. With the leaflets go forward the necessary materials for the construction of the articles indicated in the printed slips. It is earnestly hoped that out of the varied experiences with these systems in all parts of the country there has come a clarified atmosphere; an understanding of what courses in the industrial arts do *not* consist of; a conviction that shopwork must be given under competent instruction; and that they have made, ultimately, possible better work based upon sane and logical premises.

These systems of manual education came into existence at a time when communities were looking about for a modification of the traditional courses; at a time when the school felt a real need for some form of manual work to supplement the three R's. Certain promoters were sufficiently keen visioned to take advantage of this want with the result that so-called "instruction sheets" became teachers. It was a relatively simple matter to convince non-educational school boards in the smaller communities especially that these courses were the acme of perfection, and that John could become a capable, dextrous woodworker if they would but introduce this form of work at a stipulated cost per head. It was claimed that no special teacher was necessary. Naturally to get a new line of activity introduced without the necessity of adding to the force would appeal to the average board anywhere. It may be stated frankly that, in some instances, much good has resulted from the courses, not in following them implicitly, but thru certain modifications and improvements. Teachers with a little training organized and taught courses not inimical to community interests. In other words the system proved the means of introducing a course in shopwork under competent instruction. In so far the system was worth while. While in certain instances they had led to better things, in a far greater number the courses have been discontinued and nothing done to supplement them; this because the system has failed to fill its claims.

It would appear that such systems are predestined

to fail if the salient point in their favor were true;—that they require no specially prepared teacher to successfully present the material to classes. Further the courses were claimed to be so well organized that they were practically teachers in themselves and that an ordinary classroom teacher would become an efficient manual training instructor under the scheme. In some instances janitors have been teachers under the system. It appears that almost any arrangement might be acceptable to proponents of these courses if installation were probable. Reference has been made to the courses, in the main, in the past tense for the reason that it seems beyond the ken of intelligent men that anyone would have the temerity to suggest the things in these courses today that they did advocate several years ago.

### Points Claimed for System.

Two particular points emphasized in favor of these courses are embodied in the printed slips of one. First, "They are definite, simple, directive and make successful work possible under teachers of regular school subjects." Second, "The strongest point in favor of these series is the fact that they were started in 1905 . . ." Any intelligent observer of things educational appreciates that no person without training may adequately interpret these lessons, no matter how directive, or teach them successfully. Further, any pupil needs intelligent guidance in his work at all times, even granting that the lessons are easy of interpretation. No adult can give this assistance efficiently without a knowledge of the fundamentals of tool procedure. An apparent exception here and there only serves to prove this contention.

The second point is so ridiculous as to scarcely merit attention were it not for the fact that it is a major one emphasized in one of the leaflets advertising a certain system. Let us grant that these courses have had a growing sale. This in no wise brings the conclusion that they are successful. Such a conclusion would depend upon the repetition of orders for the courses; the type of teacher handling the work; the character of work produced; the progress of the pupil under the scheme, and so on. As stated previously, if in the towns where these courses have been in use, they come to think industrially and have discontinued them for a vitalized and re-organized plan, then the courses have fulfilled a mission in that they have brought about a commendable reaction. It is conceivable that certain

schools would continue to order these courses thru lack of initiative and lack of knowledge of anything better. Certainly an untrained and inexperienced teacher in the manual arts cannot be termed competent to pass judgment on these courses, and yet owners of such systems rely upon their judgment regarding "the unqualified success of your system of industrial education."

ment arrived, the character of which nonplussed the principal and others who claimed no working knowledge of the manual arts. The benches were really toys, inferior in make, and totally lacking in rigidity. The tools were inferior in grade, of the toy variety, and wholly inadequate to the needs of the pupils. Apparently this was a typical equipment, and certainly was a recommended one. The board found

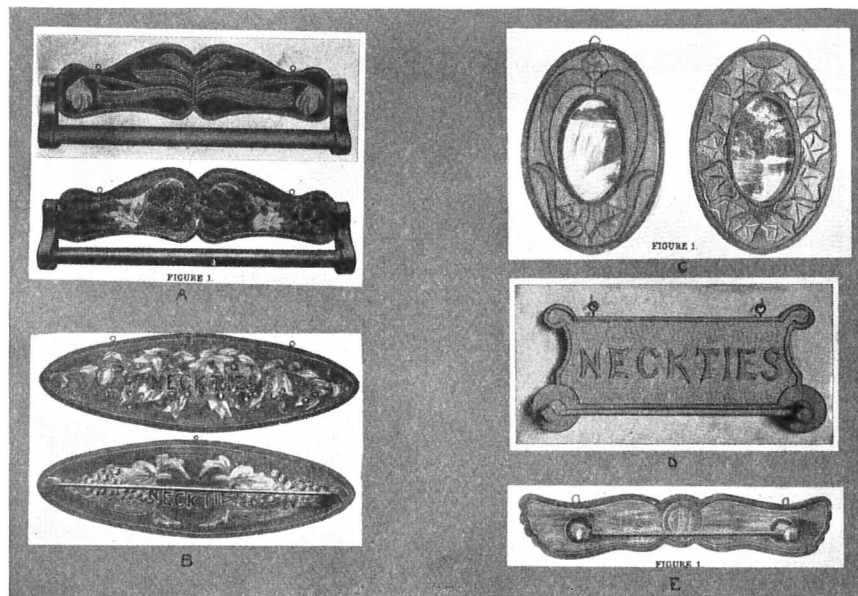


PLATE 1

Another point emphasized in the literature of certain systems is that they are nominal in cost, particularly for the reason that the work they advocate may be accomplished with a very limited and inexpensive equipment. This is the ancient story. The minimum equipment advocates should be muzzled. And generally they make little or no distinction between a minimum equipment and a cheap one. A man may eat without the usual table accessories but not quite as dextrously or as comfortably as he may with them. There can be no justification for the practice which makes for minimum equipments. Any equipment must be sufficiently complete to execute all phases of work efficiently. Make-shifts and substitute tools cannot possibly perform the functions of tools especially designed for given operations, nor in as speedy or efficient a manner. Every shop should provide tools liberally and intelligently for all types of work undertaken. Generally these systems do furnish equipment at a low cost. However, they generally furnish tools of a low grade of unknown make. The initial cost may be nominal, but the ultimate expenditure is bound to refute the initial low cost argument. Breakage, rapid wear, and useless tools mean replacement. The writer has had first-hand experience with one of these systems in a village near his city. A certain representative of a system conferred with the board and the principal and finally exacted an order from them. In due time the equip-

ment arrived, the character of which nonplussed the principal and others who claimed no working knowledge of the manual arts. The benches were really toys, inferior in make, and totally lacking in rigidity. The tools were inferior in grade, of the toy variety, and wholly inadequate to the needs of the pupils. Apparently this was a typical equipment, and certainly was a recommended one. The board found

#### Character of Work.

It is conceded that courses must be planned sequential in character. This is obviously necessary to assure maximum development. Included in this development are the necessary mental training, acquired tool technique and manipulation, a habit of orderliness, and the like. These results are not, and cannot be, arrived at thru such distorted problems which involve as major processes filing, coping saw work and carving. Yet certain leaflets in two of these advertised courses give a *series* of so-called progressive problems involving the use of the tools mentioned. Designs are supplied for each one of these problems. Carbon paper is included and directions given for transferring these designs to the problems, and emphasis is laid upon carefully following each line. In art where we are asking for a certain spontaneity and originality, and for the development of an appreciation of what constitutes good design, this is foisted upon the pupils as commendable and appropriate for the problems given.

In the courses of a certain system, arranged for seventh grade, the following problems are given in order: Calendar, necktie rack, photo frame, strop, whisk-broom holder, bracket shelf, coat hanger, book

rack, and hat and coat hanger. In five of them the important and suggested tools are wood file and coping saw. Carved decoration is emphasized. Minute directions are given for the transfer of the attendant designs to the problems. There appears no sug-

work, or suggest in the remotest degree technique? How any advocate of these systems can have the temerity to stand behind a course and attempt to justify it when perhaps fifty per cent of the problems are executed with coping saw and file, and in which

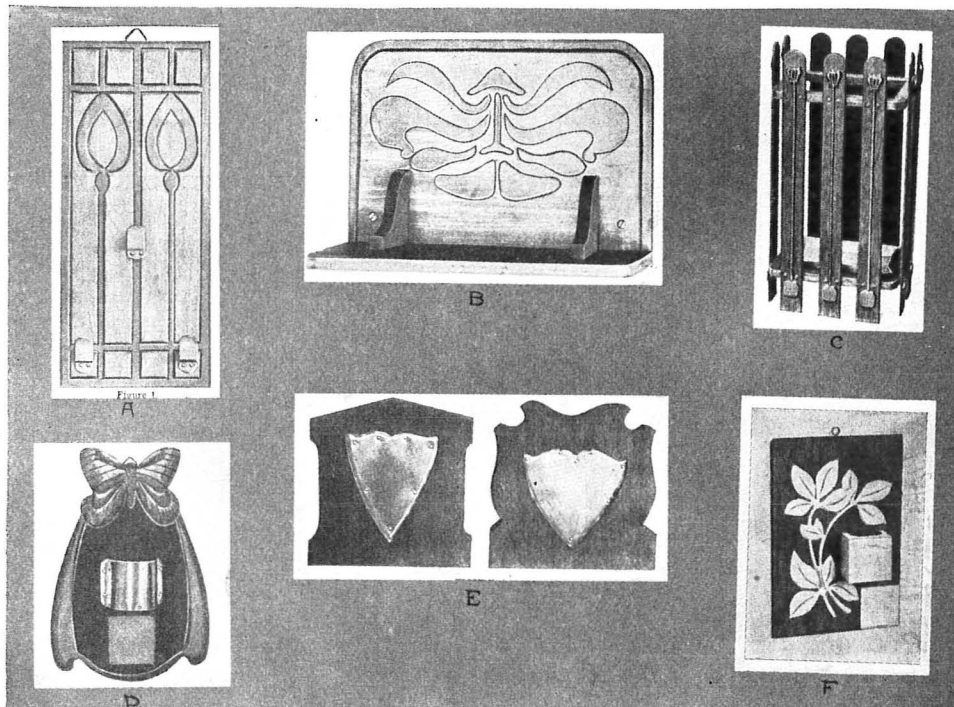


PLATE 2.

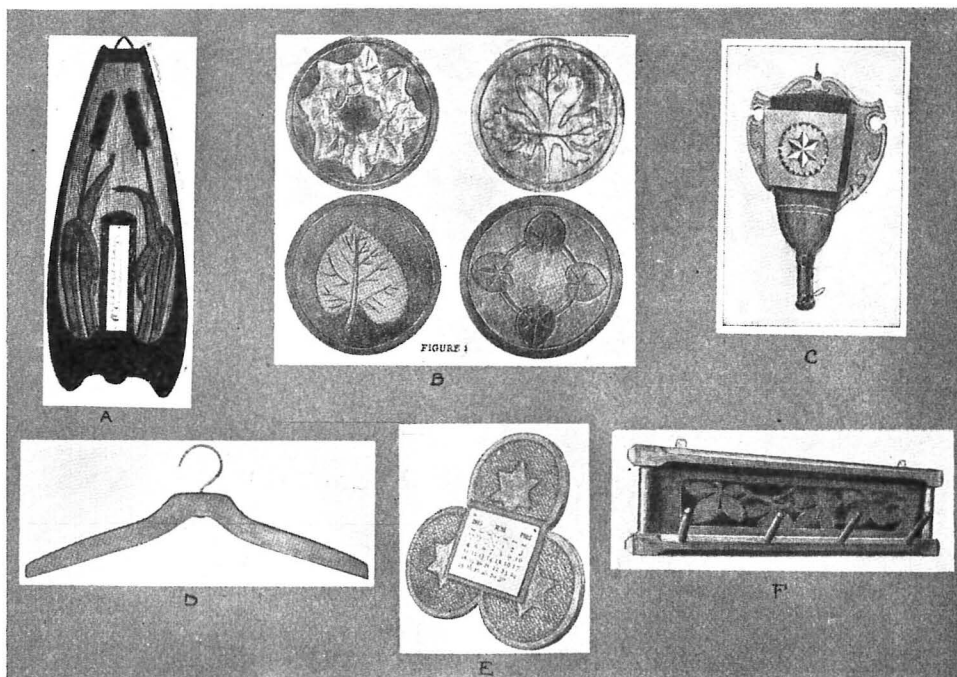


PLATE 3.

gestion that modification of the designs is desirable, or that an appropriate one be developed by the pupil. As given, "The photo frame. . . will give you a chance to do some very pretty work in decoration." Reference to the frames shown in the illustrations shows the character of this pretty work.

Does the bastard file generally permit of accurate

decoration is inappropriate and flamboyant, is beyond the ken of the writer. It should be stated here that reference is made to elementary school courses. Certainly the tool processes cannot be called by such a dignified term; the processes they advocate are fundamentally not pertinent in building a foundation for work which necessarily must follow in any





Fig. 1. Slip Seat and Commercial Cane Seat.

woodworking capacity. Certainly poor work may exist in many shops under trained instructors, but at least the courses are not based on unstable foundations. There is hope for betterment. But in courses that are inherently wrong there can be no progress as such until the problems and tool processes are modified radically. This is the reply to one of the arguments of the system advocate.

Filing as a method of finishing should be resorted to only in rare cases. Applied design of the character suggested in the illustrations reminds one of the pyrography and thin brass days. An article well constructed and proportioned requires little if any decoration, and then it must be subdued in character and subordinate to the structure. It should appear to be an inherent part of the structure and to grow out of it. We cannot but note that the decoration in these problems is the important thing. Habits of the kind which this particular work permits boys to develop must be ultimately overcome. The whole plan of procedure is inherently wrong.

It is granted that there are certain good points in these courses. Generally speaking they are the treatises on manufacture of screws, nails, shellac, and on foresting, milling, etc. It is essential that each boy understand in a definite way the manufacture and use of all agents which he comes in contact with in his shopwork. At intervals certain commendable problems are introduced, but the preliminary experiences the boy has had have been so distorted by the atrocities called problems, that it appears doubtful if he could discard his previous methods of procedure for a sufficient length of time to do commendable work involving good tool work.

#### Certain False Impressions.

The contention that the systems of industrial education are filling a real need in that they give opportunity for manual work that otherwise would not be given, is not well taken. They fail to fill a real need unless real development and progress result. Boys are far better off without manual training than with training given improperly and incompletely. As stated previously, the fact that work under trained instructorship shows carelessness and shiftlessness,

in no wise alleviates the conditions existing in the systems or makes their position less objectionable. If the systems continue to have patronage we cannot get away from a poor thing. A poor teacher may be made competent or be removed. It may be unfortunate that poor teachers are permitted to continue teaching, but it is a calamity that these leaf lessons permit a continuance of the conditions that are deplored in the first instance.

Advocates of these courses claim that excellent industrial arts teachers and directors unqualifiedly praise, recommend and use their courses.

Excellent men perhaps, but men with initiative and resourcefulness would adapt and arrange courses to fit their peculiar requirements. No course in elementary manual education is static; it is subject to great variation to adequately meet community requirements and changing conditions in our national life. Yet some of these leaflets have undergone little or no modification since their first appearance; the same problems are being executed in the same old way. Still they are advertised as progressive.

The directions in these leaflets are explicit and minute. They allow little leeway for the worker. Eliminating the problems as a factor, the very detail in the directions may destroy interest. Much as we may prate on the value of interest in work we finally need to conclude that interest is fundamental and prerequisite to the acquisition of worth-while knowledge. If offers an incentive for work and to a great degree develops efficiency. If these courses were to be reorganized on the basis of boy interest the authors



Fig. 2. Center Table with Hand Caned Panels.

would go a long way toward making them tolerable, and perforce, better workmanship would result. On this basis, naturally the problems would have to be modified and in many instances eliminated, making way for others of a vital, pertinent nature.

#### The Problems.

I have taken at random certain problems from two systems of industrial education. They are representative of the group planned for elementary schools. A glance at the plates will convey to any one familiar with wood-work and the theory of good design the impression of inferiority. Plate 1, for example, shows necktie racks at B decorated with grapes and wild cherries. To explain the camouflage it is thought necessary to emblazon on the all ready flamboyant surface the word "Neckties." E suggests a Greek decoration of high order relegated to a plebeian tie rack. Plate 2 shows but one problem in which design is consistent and unobtrusive. This problem is illustrated at A. The applied metal to the book ends at E bears no relation to the wood ends; they appear entirely foreign to the wood. C is suggestive of a picket fence, and is structurally weak and over decorated. D simulates the butterfly structurally and decoratively; a beautiful conception for an immature mind. F is beyond all comment.

Plate 3 shows further types of work which these systems advocate. It is unfortunate that such atrocities are permitted and that the arts are exploited in such a manner. It cannot be possible that these systems are today enjoying any great degree of prosperity. If they are it is the duty of organized bodies of industrial arts workers to take cognizance of their activities and aim to curtail them thru necessary publicity.

The problems illustrated by Figs. 1, 2, 3 and 4 were all constructed by seventh-grade pupils. Those illustrated by the plates are in the main advocated for seventh grade by the systems. Note the different types. These are offered in substitution for those offered by the systems. In offering these few problems no attempt has been made to suggest sequence, or to evolve a course of work, but merely to contrast the work seventh-grade pupils should undertake with that which is obviously inferior. These problems involve definite progressive and standardized steps in their construction. They may be modified in manifold ways to suit individual requirements both as regards the method of construction and constructive design. Some medium, as cane, splints, fiber, leather, and webbing is suggested and required for completion. If economy of wood be a consideration then such mediums are appropriate in a dual way on problems in the school shops and are fully worthy of adoption. An indefinite number of like problems could be suggested and illustrated

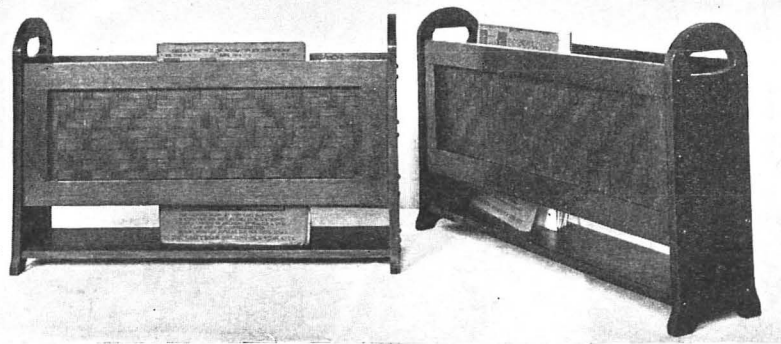


Fig. 3. Magazine Holders with Splint Panels.

but the writer feels that those shown are ample to bring about a comparison between the types of work seventh-grade boys are competent to handle, and the other type advocated by the systems of industrial education. He believes that these problems permit of intelligent, progressive and worth-while work, while those illustrated by the plates permit only of shiftless and aimless play activities.

#### Conclusions.

Generally speaking, it is not sound educational practice to judge any shop course by the projects alone. Rather we should judge by certain standards maintained of which the projects are a partial outward expression. For instance, what amount of technical knowledge should a boy have acquired say, at the end of the elementary school period; what technical skill; what amount of initiative and self-reliance has been developed; what habits of work, etc. On the other hand the problem speaks fully of his progress as regards skill. If the problem be inferior and inadequate it precludes a lack of systematized planning, and suggests a low standard of requirement. And so in these system courses the problems in no wise even suggest that progressive standard work is demanded. There appears to be an utter lack of sequential tool work. The design of the problems is generally poor, and decoration inappropriate. Construction of a high order is not de-

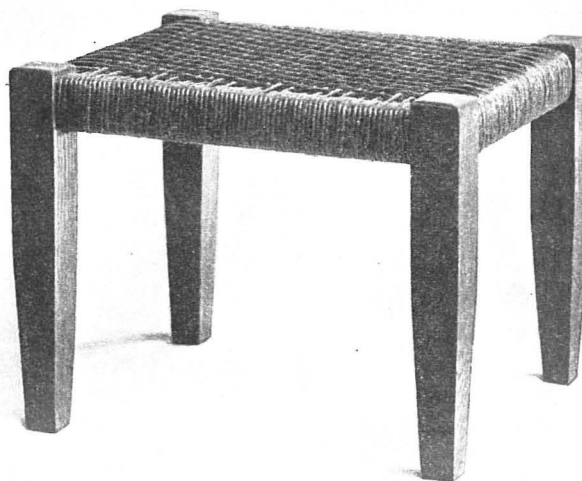


Fig. 4. Stool with Woven Fiber Top.

manded, inasmuch as the file is the major tool in the operations. The courses allow for little initiative; the problems lack interest for the boys of the maturity for whom they are intended; directions are not

always in accordance with best technical practice; they are planned without reference to local community needs; the sameness in the problems is deadening to interest. They are obsolete.

## THE TRAINING OF VOCATIONAL TEACHERS

R. H. Rodgers, The Stout Institute, Menomonie, Wis.



IN the development of vocational education trained people in that field are absolutely necessary. It is a hackneyed expression to say that the success of the entire movement depends upon it. For a decade at least the vocational teacher and the training and preparation necessary to successfully handle this work has been the center of discussion. Despite this there is still a place for much clear thinking and definite experimental work on the entire program of training teachers.

Some of the extremely pertinent problems not yet fully solved are: in how far are the vocations themselves to be the source of teachers; will special schools be able to train these people; the characteristics, advantages and disadvantages of both types of training; the advisability of formulating a definite policy for preparing vocational teachers.

First, it is well to note rather pointedly what the vocational teacher's job demands. It may be summarized as follows: skill as a worker in a particular vocation; a knowledge of the related aspects of the vocation; a knowledge and understanding of shop and labor conditions; finally the ability to impart what he knows to others. If these demands are analyzed more closely we may say that skill implies the ability to do a given piece of work involving plans, materials, tools and equipment in a given time in a workmanlike manner. This involves a large number of tool processes and constructive operations.

A knowledge of related aspects of the vocation means the ability to work from drawings, familiarity with the mathematics necessary from day to day and an intelligent understanding of the equipment and materials in daily use. A knowledge and understanding of shop and labor conditions implies an intimacy with the customs and practices and an insight into the working life of the tradesman. Ability to teach what he knows of the trade to others is a problem of the analysis and organization of processes and subject matter with due reference to the receiving and doing capacity of the learner. This demands a good working knowledge of the mechanism of the human mind. Furthermore, in connection with the imparting is the whole problem of handling students, controlling classes or individuals, routing of work and other essentials to efficient instruction and high standards.

Leaving the requirements of what a good vocational teacher should bring to the job, let us note what the average skilled mechanic does actually

possess as such that makes him valuable as a teacher. First, he possesses the skill in his immediate line of work; second, thru this skill the confidence in his own ability to handle anything on the productive side of the work; third, a knowledge of shop conditions, or as it is surreptitiously labeled, shop atmosphere. Summarized, the trade trained man's qualifications are skill and intimate knowledge of the trade. On the other hand he is apt to be an individual short on general education, having probably completed only the eighth grade, weak in the use of the mother tongue and destitute of the first essentials necessary to teach his trade.

Let us note now what the individual from a special school brings to the job of teaching the vocations. It is now quite generally conceded that in the well organized and equipped school a man may acquire the necessary skill even in a shorter period than under the old, time-killing apprentice system. He receives further, training and experience in the related subjects such as drawing, mathematics, science, materials and equipment. In addition he receives the training in analyzing and organizing vocational work, experience in handling classes and familiarity with the entire teaching problem which enables him in turn to bring to his work the atmosphere of instruction. Summarized, the trained teacher has the skill, technical training and the ability to impart this to others. One thing which he does not bring is a first hand knowledge and acquaintanceship with shop and labor conditions.

As we throw the individuals from each source up in front of us it is found that the man trained as a teacher lacks but one thing that the tradesman has, but in turn possesses much in his favor. The lacking essential, first hand knowledge and acquaintanceship with shop and labor conditions can only be secured by rubbing up against the job but approximately six months of it supplementing the school training will serve to start with. On the other hand to supply what the tradesman needs to round him out opens up a larger question.

A policy has been adopted in some places and the tendency seems to be that the tradesman is the only satisfactory source. It seems to be the belief on the part of some that all these men need is an injection of several doses of a concoction of pedagogy and class management and, presto, you have a teacher instead of a producer. Fortunately for the writer on the present stand taken, he is one who has come up from long years at a trade and knows what it means



to change from the attitude of production to one of instruction. Furthermore he has been engaged on the problem of training vocational teachers for a number of years. Four years have been commonly accepted as the time necessary to spend in learning a skilled trade while on the other hand it is being assumed that teachers can be prepared in a limited number of evenings. This is a fallacy pure and simple. All that is being done is to give some few selected individuals the barest rudiments of the work of the teacher. This policy may be justified on the ground that it meets the present emergency, but it should be understood that it is only an emergency program.

In conclusion, the emphasis is placed upon the following: First, the pre-requisite, for teaching the vocation should not necessarily be six or eight

years at the trade but, rather, what the individual can do in the trade and what he knows about it. Second, large numbers of tradesmen with their lack of education cannot be transformed in a short time from producers to instructors and in lieu of this fact should only be the source of emergency teachers. Third, teaching the vocations is a separate and distinct line of work and as such demands definite intensive preparation the same as any other recognized vocation. Fourth, the men trained in specially organized schools with a short period of supplementary trade experience and with the emphasis placed upon instruction are the men best fitted to carry out a permanent vocational education program. Fifth, the situation demands the immediate establishment of a broad policy for the training of vocational teachers that will look and provide beyond the present emergency situation.

## PAPERMAKING AS AN INDUSTRIAL ARTS UNIT IN THE ELEMENTARY SCHOOLS.

Estelle May Rich, Seattle Wash.



Illustrative of aims and methods in teaching industrial arts in the elementary school, the following arrangement of subject matter in teaching the industry of papermaking is suggested, in order that teachers who may be interested in papermaking as an industrial arts unit may become acquainted with a definite method of procedure.

The aim of this particular unit of study will be to lead the children to appreciate the significance of paper as a material used in the world today for perpetuating knowledge, a material which has gradually been evolved by the race in its desire to place itself on record.

To approach the historic subject matter of papermaking the children's attention should first be directed to those paper products which are most intimately related to their own life experiences. To make the class feel the desire for this knowledge, thru interest in their daily needs, the instructor may well ask the children to imagine themselves for a single school day without books, maps, tablets, blotters, pictures, etc., or for a day at home without newspapers, magazines, wall-paper, cartons, wrapping paper, etc. The children will now easily appreciate how the race was handicapped for centuries without paper.

### How Records Were First Kept.

The children now become interested in mediums used by primitive peoples for recording facts, learning how men in each succeeding age thru inherited knowledge and thoughtfulness invented more efficient means for preserving these records. The activities of primitive peoples are always romantic to children. We shall begin with *tradition*, the first method of preserving knowledge. It was used by the Greeks before the time of Homer and also by the

North American Indians. We shall see that tradition was aided by the *cairn* used in Biblical times for marking places where certain acts or miracles were performed; that the idea of *using blocks of stone* and *obelisks* appealed to the Assyrians and Egyptians as being more desirable than the *cairn* since these provided a surface suitable for carving pictures and hieroglyphics; how *clay tablets* in turn became preferable to blocks of stone and obelisks since these could be molded while soft and could be more easily moved about; how *skins*, *wood*, and *leaves* with the Greeks and Romans took the place of the clay tablets of the Assyrians, being much less clumsy.

### Papyrus.

The Egyptians were the first to recognize possibilities in the papyrus plant for making a crude sort of paper. Papyrus flourished bountifully along the banks of the Nile. Children will be interested in knowing that the ark in which the infant Moses was hidden away among the reeds of the Nile was woven of the reeds of this same papyrus. The plant grew to a height of ten or twelve feet and it is familiar to us all in the form of our "umbrella palm." The long white fibres inside the outer wall of the stem were used in making the writing material. After the outer wall was removed, the long inner fibres were separated by a pointed needle. These were then laid side by side on a smooth, hard surface, other fibres laid at right angles to these and the whole moistened with a gummy water. After applying pressure for several hours the sheets formed in this way were rubbed with a stone or piece of ivory, and afterwards dried in the sun. Papyrus was universally used thruout the civilized world at this time. The children will be interested in the old Greek library

at Alexandria in Egypt in which manuscripts in the form of papyrus rolls were kept.

#### Parchment.

The invention of parchment as a writing material immediately followed that of papyrus. There is an interesting story regarding its first use. The King of Pergamus, in Asia Minor, was ambitious to build a library excelling that at Alexandria. The jealous Egyptians, however, refused to sell him papyrus, so the King of Pergamus, not to be beaten, discovered a way of making a writing material from the skins of sheep. This material, parchment, is still used for diplomas and for other documents.

#### Vegetable Pulp.

The first people known to utilize vegetable pulp in making paper were the Chinese, who succeeded in making a writing material from the fibers of the bark of the mulberry tree, which were beaten in water which contained lye. The pulp was molded into sheets, pressure being applied by means of weights. The Chinese also made use of silk fibres. When Samarcand, a splendid Chinese city, was seized by the Arabs, the secret of papermaking was carried to Arabia by Chinese prisoners who had been captured with the city. The Arabians, however, supplemented the knowledge gained from the Chinese by discovering the adaptability of linen and cotton fibers to the making of paper. Thru the Crusades this valuable information was carried to France in 1189. The French people were already famed for the accepting of new ideas, and for their progress in manufacturing. It was not until about 1500 that the process of papermaking was introduced into England. The English being far behind the French in industrial work and the refinements of life, the industry grew slowly. The paper makers, however, encouraged by royalty, persisted in improvements until in 1739 there were six hundred paper mills reported in England. American mills were granted patents at almost as early a date as the English, the first being established at Germantown, Pennsylvania, in 1690. Children will be interested to trace the route of this wonderful secret on the world map from Samarcand to German-town.

#### Water Marks.

One of the most fascinating phases of the study of papermaking is the history and significance of water marks. Water marks have played a part in important transactions and in some instances have even become chief witnesses in courts of justice where a forger dated the forged document back, not knowing that he was using a paper bearing a water mark of later date. The earliest water marks accounted for were used in 1330. These were very simple, perhaps only the outline of a pot, an urn, or a jug. Then for a number of years the royal coat-of-arms was the favorite water mark of paper manufacturers in England. When Charles I was driven from the throne a fool with cap and bells was mock-

ly substituted for the usual royal coat-of-arms. In later years water marks were used rather as a trade mark; for instance, the Crane Paper Company uses the figure of a crane as its trade mark. Children delight in collecting water marks. A chart of these may be made by cutting rectangles a little larger than the size of the water marks, out of a large piece of heavy mounting board, and pasting the water marked papers over these openings. The mounting board is hung in a window where the marks can be plainly seen, the light shining thru the water marked paper.

#### Modern Paper.

The romance of papermaking does not end with its history. The children will be just as interested in the toilers of today who are busily engaged in transforming old rags, wood and grasses into paper for man's use. Poplar and spruce pulp are used in the making of wrapping papers, newspapers, and the cheaper magazines; cotton and linen rags for books, stationery, bond papers and better magazines. Esparto grass is fast taking the place of rags. The raw materials must first be reduced to pulp; afterward the pulp is sized, molded, and pressed into sheets. If possible the class should be taken on a visit to a pulp mill or paper factory. If this is not possible, certainly the industry is worthy of study thru descriptions, pictures, and simple processes.

In converting consignments of old rags into paper the bales must first be opened, and the rags, oftentimes filthy, taken thru processes of thorough purification known as threshing, sorting, shredding, cutting, whipping, boiling, washing, bleaching, etc. The machine called the thrasher threshes the bulk of dust and filth out of the rags by means of a large revolving iron tube fitted with spikes which tear into them. From this machine the rags are sent on into the sorting and shredding room where they are arranged in piles, according to size, color, etc. The women workers then remove all buttons, hooks and eyes, and thick seams by means of large knives resembling small scythe blades, which are fastened upright on a long table with the backs of the knives toward the workers. In this room the women also cut the rags into small pieces a few inches square tho in some factories this is done by machinery. The rags then go into a machine called the willow and duster. The willow consists of strong tubes fitted with iron spikes and a drum that is also spiked. In revolving, the rags are torn and shredded by the sharp spikes and passed on to the duster. From the duster they are carried on to the digesters, in the boiling house, where they are further purified by boiling from twelve to fourteen hours, in huge sealed boilers which are about eight feet across and six feet deep. Each boiler is half filled with water containing caustic soda, which is added to cut all grease from the rags. The water is boiled by means of live steam admitted thru pipes at the top and bottom. Boiling renders the rags soft and the fibers

flexible. The boilers are emptied from the bottom and the contents allowed to drop into large tubs mounted on wheels which are rolled to the breaking engines.

The breaking engines now reduce the clean rags to a pulp so fine that it resembles porridge. The breaking engines are like large bath tubs being six feet wide, twelve feet long, and two feet deep, fitted with huge taps that admit streams of water. The breakers, packed with the boiled rags, are half filled with water. Inside these tanks are strong blunt knives which, mounted on heavy rollers, pull and cut the wet rags into fibers. Fixed in the tubs are large drums covered with wire cloth thru which the dirty water and impurities drain away, while the pure water is running in. In this way the surface of the water is kept at about the same level. The rags are washed in this manner until they are clean.

It is at this stage that the pulp is bleached white. However, the pulp is not yet ready to be made into paper, for the sheets would probably be thicker in some parts than in others. The pulp is now called by the workers, "half-stuff." All the fibers must be separated before they will make smooth paper. The machine that does this is called the beater or Hollander. It looks very much like the breaker, an oblong trough with rounded ends. There is a partition down the middle so that the pulp circulates round and round. At one end is the beating roll on which knives are fixed. It looks like the paddle wheel of a steamer as it goes round and round and keeps the pulp on the move. The chief use of the roll is to draw all the fibers out that there may be no hard lumps in the finished paper. When the engine starts and the pulp is coarse the roll is put on light and then gradually lowered until the pulp is beaten into fine fibres. This process requires much skill in operating the machine. When the pulp leaves the beater it is called "whole-stuff."

Still another interesting bit of work must be done to the pulp if we wish to use the paper for writing or printing. If we compare a piece of blotting paper with fool's-cap, we find that one feels soft and the other hard. The pores of blotting paper are open, therefore it will suck up ink. When making writing paper these pores must be stopped up. We call this stopping of the pores sizing. Size is a solution of gelatine made from hides, hoofs, and animal refuse. The wet paper is usually carried by means of traveling felts thru a bath of heated size. The excess gelatine is removed from the paper by rubber or wooden rollers. All paper would be like blotting paper, if it were not sized. Before leaving the study of these machines the children should be led to appreciate in some measure the work of the clever mechanics who persevered years and years in order to perfect them.

Now the fine fibers of the pulp will have to be felted together as well as molded into sheets of paper. The fiber must be tangled, intertwined and pressed

into one solid mass. Many of the large machines used for this purpose are two hundred feet long. The pulp, direct from the vats, runs into the machine at one end and at the other it is taken away, in the form of huge rolls of paper. A few men care for these machines, oiling them and keeping them very clean. As the pulp leaves the vats, it is further strained and purified; then it flows on to a table of wire cloth. At the sides of the wire cloth are deckle straps which regulate the width of the paper. The wire cloth table is so made that it moves from side to side, the water draining away from the cloth while the motion felts the fibers. Where the "stuff" enters it is rocked rather violently and the reciprocating motion gradually diminishes as the pulp nears the other end and then ceases completely. It is interesting to see the pulp move along the wire cloth gradually becoming more and more firm.

The water mark is now impressed by a revolving cylinder called the dandy roll. This is covered with raised wires which form the required design. It presses tightly upon the wet pulp. The paper is still very moist as it passes thru a number of rollers covered with thick felt where it is mangled and more water is removed. It is next sent round and round a number of rolls which are heated by steam. In this way the paper is thoroly dried. Sometimes there are twenty or thirty of these drying cylinders in the mill. The paper may now be surfaced or calendered, if desired. The last thing to be done is to cut the paper into the required sizes and to wind it on reels. In manufacturing paper for newspapers a reel often contains a roll five miles long. The three foregoing paragraphs show how children may be given an intelligent idea of a cross-section of the paper industry.

#### Centers of Manufacture.

The children will now locate with interest the principal centers of paper manufacture. The most important in the United States are at Pittsfield and Holyoke, Massachusetts. They may also be anxious to read and report on papermaking by hand in Japan and Spain after seeing samples of some of the exquisite hand-made papers made from rice, wood, and esparto grass. The patience of the Japanese, their artistic originality, and care for detail will appeal to them.

#### Projects.

During the time that the class has been coming to a fairly full appreciation of the world's paper industry they may well have been making a collection of different products made of paper. They will bring a varied assortment as newspapers, sand-paper, wall paper, cartons, shelf paper, magazines, books, stationery, paraffine paper, carbon paper, etc. The class will enjoy arranging these upon a chart, thus showing the uses of paper. They will profit by examining and discussing them.

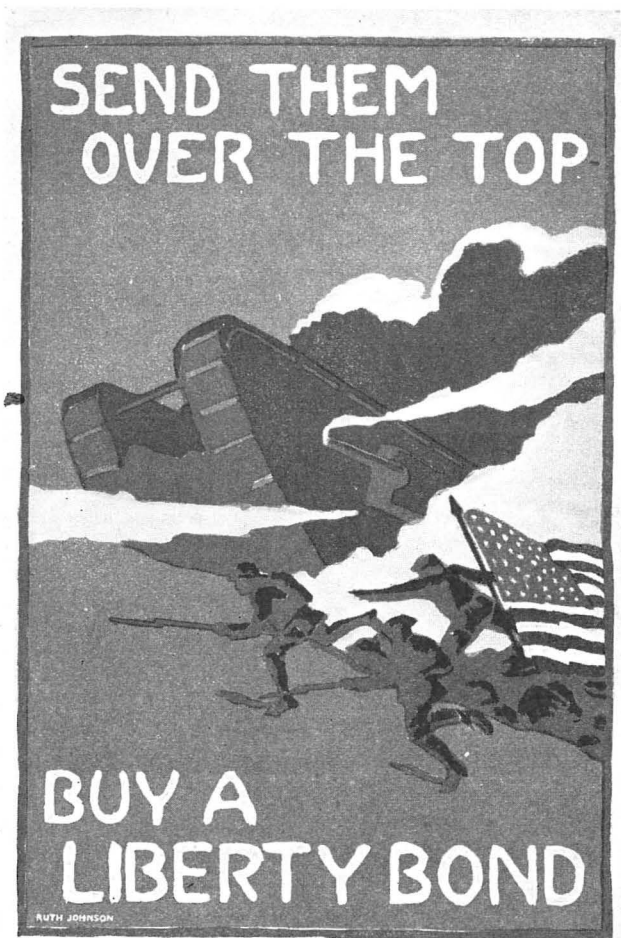
Papermaking by hand, as illustrative of the modern process of manufacture, is perhaps the most



important phase of this unit of study, as the children will realize only in this concrete way the significance of the industry and appreciate the efforts of the workers.

The children will collect clean rags, shavings and paper. These are all torn up into fine bits. They should be boiled for four hours in a solution of caustic soda. This mass should then be washed thru three waters and allowed to dry. When dry the purified rags and other materials are ground in meat choppers until the whole mass resembles dusty wool. The pulp is now stirred into a pail of warm water containing six teaspoons liquid glue, eight teaspoons starch and one tablespoon bluing. One child stirs the mass continually to keep particles of pulp suspended in the solution so that when the mold is dipped in, it will be brought up full of pulp. A mold

may be made of a piece of wire screen about six by eight inches stretched over a wooden frame. The first child now molds a sheet of paper placing it on a sheet of cheese cloth. Over this another sheet of cheese cloth is laid and the next child molds a sheet and another layer of cheese cloth is laid upon this and so on until each child in the class has molded one sheet. Each molded sheet must be placed directly over the preceding one. This stack of molded sheets is then placed in a tray which has punched holes, in order that the liquid may drain off and is then put in the press to dry. After the paper is thoroly dry each child may have his sheet of paper to examine or mount. While making the paper by hand, the teacher should always keep in mind that the aim is to clarify ideas and not to make a product for exhibition purposes.



#### SCHOOL WAR POSTERS THAT HAVE BEEN POSTED.

Too many war posters prepared in the schools fail to get beyond the original. In fact, it may be questioned whether one out of a thousand is ever reproduced in quantity and displayed in public places. The illustrations above are made from actual posters prepared by students in the Wm. L. Dickinson High School at Jersey City, N. J. After the drawings had been completed, the students who made the designs transferred them to linoleum blocks and the printing class under the direction of Mr. Ralph A. Loomis, printed a quantity for display in the section of the city which the high school serves.

The Hale Poster as reproduced, measures 10½ inches by 15 inches and is printed in three colors—black, red and blue. The Liberty Bond Poster measures 12 inches by 18 inches and is printed in five colors. It is noteworthy that the posters are as well finished as those issued under government auspices and that the printing resembles an excellent quality of commercial lithographic work. The black and white illustrations fail altogether to do justice to the vigorous, well balanced colors of the posters.

# EFFICIENCY EQUIPMENT

Louis J. Haas, Director of Men's Occupations, Bloomingdale Hospital, White Plains, N. Y.



In recent years much has been written about efficiency as an element of success in industry. Much of the progress in industry and business, as also in other forms of human activity, has resulted from a conscious desire to improve the "efficiency" of machinery, of workshops, and of men. Industrial education is a form of effort toward increasing the personal efficiency of workmen, and it is quite fitting that the underlying principle of "efficiency" should

which are of general interest for the school shop and the occupational shop of whatever nature.

Much may be done to make a basket workroom efficient. In the Bloomingdale shop building, tables used by a number of workers at one time have been eliminated and tables large enough to accommodate but one worker comfortably have been designed and built. It was observed that confusion was caused by the old practice of having all workers go to a central supply tub for such soaked reed as they needed

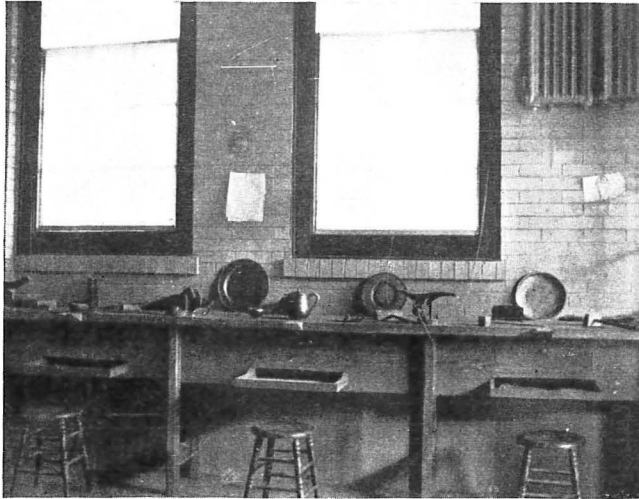


Fig. 1.

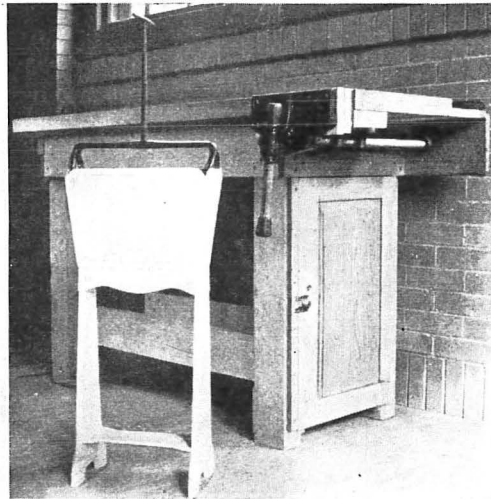


Fig. 2.

## EXAMPLES OF EFFICIENCY FURNITURE.

Figure 1 is a unit of three metal working benches planned especially to fit the space which they occupy. The height has been adjusted to the needs of the work and to the height of the windows. It will be noted that the radiator has been placed upon the wall out of the way. Figure 2 is a carpentry bench arranged with a special form of cabinet in each end to hold a set of tools. The bench and the magazine rack before it were designed and made by a student.

be applied to the teaching and shop methods and the equipment of industrial and vocational schools.

During the past two years the general theory of efficiency has been the underlying motive of a variety of work which has been done in equipping the new occupational building of the Bloomingdale Hospital at White Plains, N. Y. The building itself was planned with this motive in mind and its twelve shops which are designed to handle instruction and constructive work in many different lines are arranged to meet the needs and purposes of the instructors and workers completely and economically. Considerable time was spent by the director, the physicians, and five instructors to ascertain the needs which the classrooms must meet. Space will not permit a description of the methods used. Suffice it to say that each of the crafts was studied in detail so that both the building and its equipment should be most efficient.

The equipment which the students helped to plan and build was studied as carefully as the building. The old equipment in the former quarters was discarded because it could not be readily moved and was unsuited for the new building. Below is described the making of certain pieces of equipment

from time to time in their basket work. Each work table has been furnished with a small water bucket which is hung at one end of the table from a hook. In this bucket is placed to soak a quantity of just the size of weavers the worker is using.

One of the difficulties experienced in reed basket making is that attending the production of bottoms of reed that will be perfectly flat when dry. Many workers strap the baskets or trays, while in the course of construction, to a flat board with bands of tape. While this method is very effective, so far as the resulting flat bottom is concerned, most of those who have tried it know how much more laborious the attached board makes the work. Vague suggestions of a simple form of press usable for obtaining this result were found in some of the textbooks on the craft. This was to be used after the work had been completed. At first a board was placed in the basket and pressure was supplied by a block over which passed a rope tied to the table upon which the basket rested. Many other methods of supplying pressure to the bottoms of completed baskets were experimented with. Finally a very adjustable but simple form of press was designed, made and found to be just what had long been needed.

Where reed is used in large quantities it becomes quite a problem to take care of the reserve supply properly so that it may be in good condition when needed. Usually the reed is tied in bundles. The ends of the reeds are tied together so that the bundles take the form of long loops and so may easily be hung

the reed saves the larger part of all wastage due to handling the reed, a waste which had been considered unavoidable.

One of the simplest yet definitely organized primitive crafts, that may easily be adapted to the needs of occupational therapy, is the art of net



PLATE I. CAUSE AND CURE FOR BREAKAGE OF REED.  
The Cabinet for Storing Reed may also be seen in Fig. 6.

over pegs in a cupboard or on a store-room wall. The bundles are tied loosely enough so that what reed is required for daily use may be easily removed by just pulling the ends of the reed. It was noticed that when thus removing small quantities of reed from the reserve supply bundles many strands would break at the point where the bundles were suspended; the waste or loss of small quantities of short reed was constantly caused by this breakage. This led to the designing of a glass paneled cabinet in which the reed intended for everyday consumption rested on shelves of pegs. This cabinet was placed on the wall of the basket room just above the large porcelain trough which was used for soaking baskets while in the course of construction. The bottom of this cabinet was left open so that the moisture evaporating from the trough could enter, thus keeping the reed in good condition. The ends of this cabinet contain doors which when opened allow the reed easily to be removed by pulling the strands by the loop instead of the ends. This way of keeping

making. Tennis net making is only the art of net making applied to a modern local need and when used as an occupation has several very attractive features. Its practice requires very little equipment. The finished nets are usually in demand locally, and the technic, while just a repetition of a few simple motions, holds the attention of the worker. The usual equipment consists only of a hook on the wall, a mesh stick and a wooden shuttle upon which is wound the cord of which the net is to be made. But we found difficulties, peculiar to our work, which made the presentation of the craft as traditionally executed impossible. Our workers would invariably count the wrong number of meshes to a given line, and when a mesh was to be added at one end of the line and a mesh dropped at the other end, they would usually reverse the order just long enough to make the net turn a corner. Much work had to be undone, when this was discovered, and for quite a while little real progress was made with the craft. We continually asked ourselves the question, "Is



there no other way it can be done?" and searched such books on the subject of net making as could be found, for some other way of doing it.

One day it was decided that if the right knot could be discovered, threads might be strung and a single thread tied across these at right angles to form meshes, thus eliminating all the difficulties of the other method. Without further delay, two chairs having small rounds spaced across the backs, were placed so that the backs formed a right angle. Four strings were tied to as many rounds in each chair back, and with a man sitting on each chair the experimenting proceeded. One tied knots while the

Loom." The warp for this loom consisted of 23 or 25 threads or cords just two feet longer than the net to be made. It is wound on a warping board in the usual way. On removing from the warping board the warp is wound upon a large shuttle of the type used for carpet rags. Just enough warp is left unwound to set up the loom. This is accomplished by tying the end of each cord to its respective hook at the bottom of the loom, passing it over a correspondingly placed hook at the top of the frame, and then gathering all the cords evenly together in a hook. From this hook is suspended a weight that keeps the warp at even tension. Finally the spacing bar is put

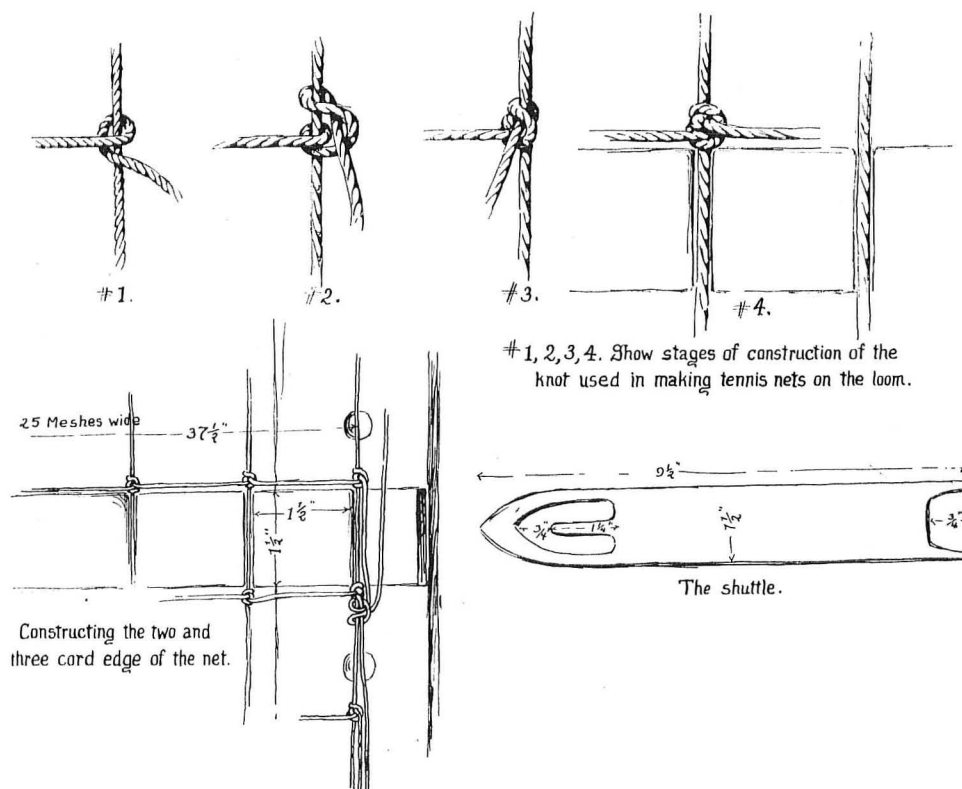


PLATE II. KNOTS USED IN MAKING OF TENNIS NETS.

The construction of the edge of the net is shown at the left.

other suggested new ones until finally a knot was developed that could be easily made by a strand crossing other threads. The knot stood all the tests against the possibility of slipping when in use. The knot having been developed the rest of the process and the necessary equipment soon evolved themselves. A frame, which could be hung on the wall, was made with hooks placed in the face of all four sides and spaced the distance apart required by the width of the meshes. With this frame was used a bar of wood just wide enough to fit snugly between the hooks placed in the frame, and long enough to reach clear across the width of the frame, having saw cuts an inch deep spaced the distance apart required by the width of the meshes. This constituted all the new equipment required by the new process and with this were used the same shuttles that had been used in the former process of net making.

We called this simple outfit a "Tennis Net

in place at the bottom of the loom between the warp and the frame, resting between two hooks on each side. The warp is pressed down into the spacing cuts in the bar and the loom is set up and ready for work. Work on the net is commenced thus: A row of knots is tied straight across the loom just above the spacing bar; then the bar is raised and a row of knots is tied back across it. Before the bar is raised again, the cord is passed down thru the last spacing groove and a knot is tied below the bar, which is then raised. The cord is now carried up thru the groove past the second row, just finished, and the tying of the third row of knots is started. This order is continued thruout the weaving of the net; namely, at the finishing of each row of knots the cord first passes downward and a knot is made below the spacing bar before the bar is raised and the tying of the next row started. This gives the two and three-cord edge which strengthens the net and is always found on

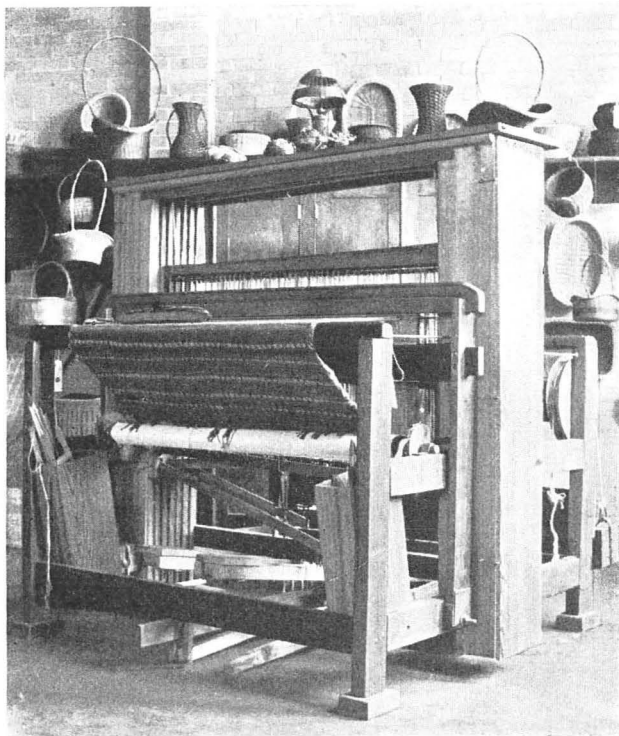


Fig. 3. Carpet Loom designed and built by several students. A rag rug was in course of construction in the loom.

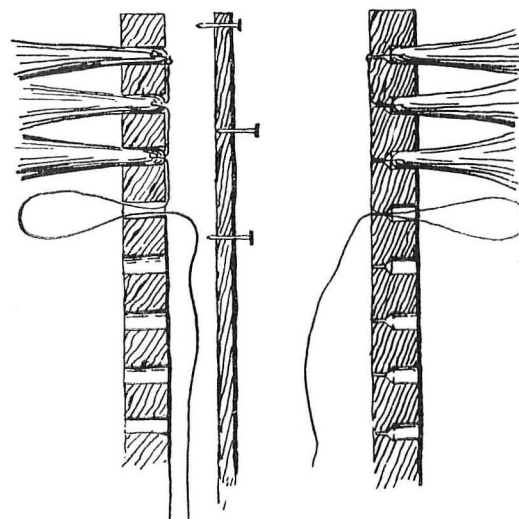
all nets made by the old mesh stick method. The first row of knots is started about six inches from the end of the warp, and the last row ends about six inches from the other end of the warp, the other twelve inches are used up in the making of the knots. The rows of knots are always tied above the spacing bar with the exception of the one knot above mentioned. The last row is completed when the ends of the warp are tied across the top of the bar in a manner that produces a two and three-cord edge similar to that forming the sides. Then the net is rolled up and the ends of the warp at the other end are tied in like manner, and the net is finished and ready to be bound and roped.

This method of net making has proved to be very satisfactory as persons who could not make nets by the mesh stick method produce very good nets on the loom. After studying the first crude loom in work and discovering its weak points the loom illustrated was designed and built. We think the method described original. The equipment is original and we are certain the quality of the work is the same as when done by the old method.

Thus after the initial equipping of the building a continual study of the different processes, crafts and equipment in use was carried on parallel with the general work. Whenever it was found possible to improve old methods or by developing new ones, to eliminate certain technical difficulties, such equipment as was needed to make this possible, was designed and built. In every instance this new equipment was of such a character that it could be built by some of our students. For them it served the highest and best purposes of occupational therapy;

namely, it was highly diversional and had also in large measure an educational and an economic value.

We felt, after using for some time, brush making in the usual occupational form that we would like to make something better than a tampico scrub brush. A machine-made hair brush was taken apart



Old brush block requiring  
backing of thin wood.

New brush block.

Plate III. Old Style and Improved Brush Block Construction.

and the construction was carefully examined, not with the idea of duplicating the construction, but with the idea of modifying the process we knew so that we could duplicate the quality of this brush. A number of ideas were worked out with more or less success until finally a process which was thoroly adaptable to our needs was found. This process gave us such quality and finish that all our brushes were soon designed so as to be made by it.

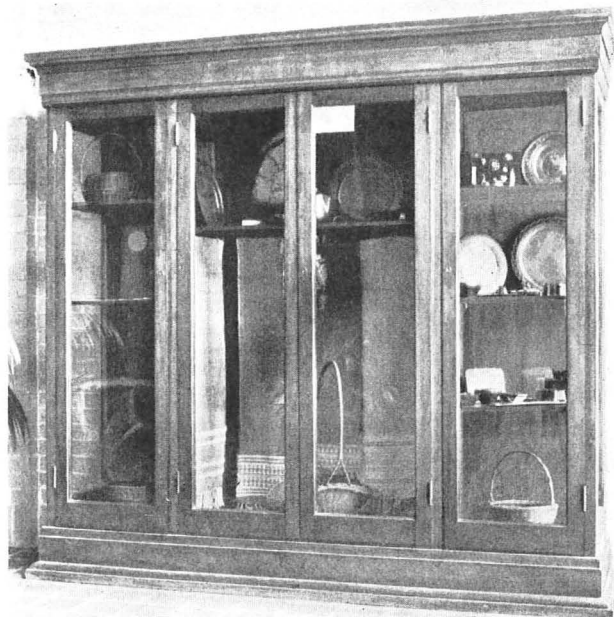
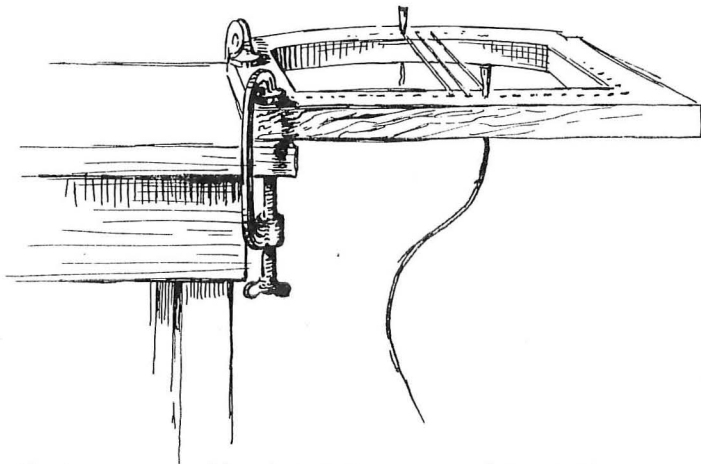


Fig. 4 One of three large cabinets built by a student, designed especially for the place occupied and arranged to contain exhibits of craft work by the students.

Doing everything by hand has a value with us that it may not have in other spheres of activity; therefore all our brush blocks are cut out, shaped, and drilled, the bristles are drawn and the brushes are finally finished entirely by hand. Special patterns were made for cutting, filing and shaping the brush. Sheet steel drilling jigs were carefully made in which the brush blocks were placed to be drilled. Finally a special drilling table which gave a flare to the bristles of the brush was designed and built by



Caning a removable chair bottom clamped to a table.

Plate IV. Ordinary method of caning a chair bottom. The improved device made by a student will be seen in Fig. 10.

the students. This was really a compound traveling table arranged so that the upper table traveled in rockers or guides which were supported by the lower table. This in turn traveled in the other direction in similar guides supported and fastened to the work bench. An ordinary adjustable bench drill centered over the drilling table was used for drilling the blocks. The block was placed in the drilling jig which in turn was snapped under small clips that held it in place centered upon the drilling table and drilled. The moving of the table, so as to make possible the drilling of all the holes shown in the jig, rocked the

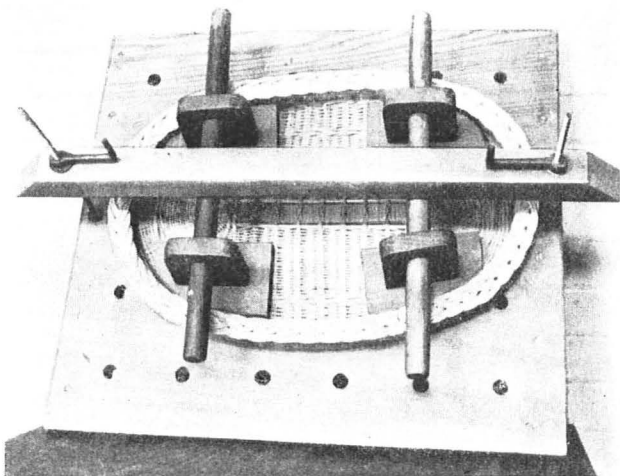


Fig. 5. Basket bottom press in use on a large tray, one of the hardest types of basketry to produce flat. It will be noted that the press can be used for a great variety of sizes and shapes of baskets.



Fig. 6. A corner of the basketry room showing cabinet, containing reed, work tables with individual supply bucket, and work in course of construction.

brush block in such a manner as to cause all of the holes to radiate from a given center giving the bristles when drawn a very satisfactory flare. The new block was not drilled all the way thru its thickness with one drill as was the old style brush which required backing with a thin veneer of the same wood. Instead it was drilled only two-thirds of the way thru and then all the holes were given a second drilling with a small tapered needle drill, which went the rest of the way thru leaving only a very small pin hole showing in the back of the brush block. The brushes when drawn, required no backing as the neat lines of fine, soft-brass-wire stitches drawn flush with the surface of the polished blocks had a decorative quality. The resulting brush not only cost less to make and looked better, but it was stronger than those made by the other method.

An easily adjusted frame or clamp for holding the blocks at three points of contact was designed and built by a student interested in the problem. This clamp holds all styles and sizes of brush blocks firmly in a way that does not mutilate the edges of the blocks. It leaves the worker's hands free for use in drawing the bristles. Thus a change in the method of construction made possible the development of a line of high-grade, hand-made brushes of all types from a crude scrub brush which was about all that was possible under the existing method. Experiments were made with the finishing of blocks for waterproofing and appearance. The scrub brush block is now soaked in raw linseed oil after the drilling is completed and when bristles are drawn requires no further finish. The finer brushes, like nail, clothes, hair, and military brushes, are given three coats of waterproof varnish on the face only, after the drilling is complete.

The bristles are drawn with No. 32 gauge soft brass wire. Then the blocks are finally shaped and sanded, and the backs and sides of the brushes are



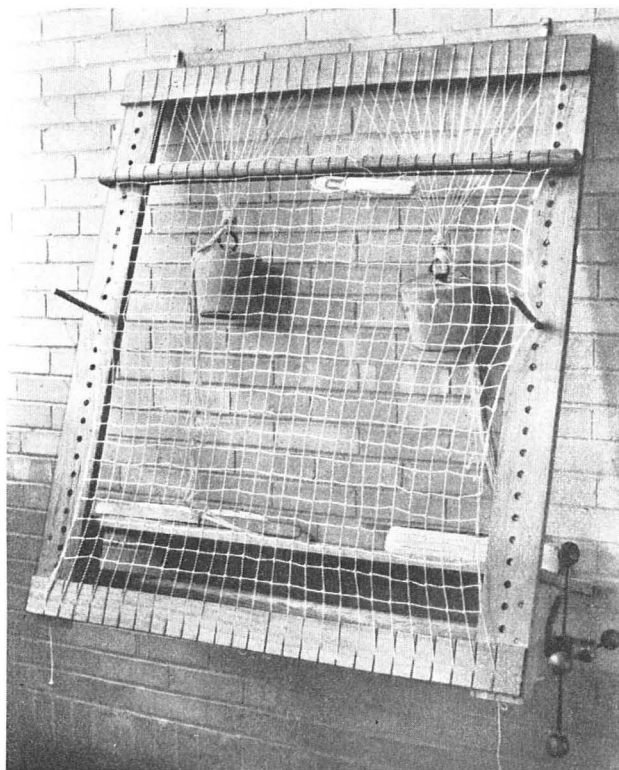


Fig. 7. Tennis Net Loom as designed and built by students.

finished with the varnish, rubbed down and polished.

Chair caning has long been used as an occupation. The craft has a technic that is well organized, and one who thoroly understands it would hardly suggest any change or improvement in the traditional method of procedure. While the craft and its technic may be enriched but little by thought along these lines, the facilities for the practice of the craft might after careful thought be much changed and improved. In many shops of a certain type, men cane chairs which are as difficult to manage as are large rocking chairs.

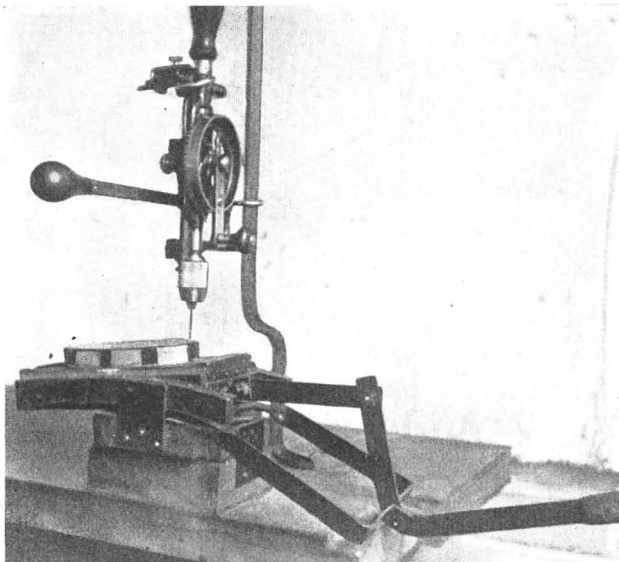


Fig. 8. Compound drill table with brush block in jig in place. The changing angle of the table is used to obtain a flare in the brush while drilling the blocks.

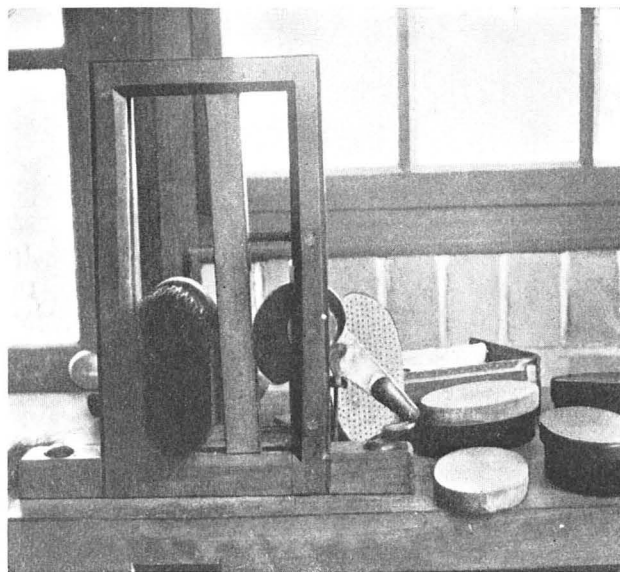


Fig. 9. Adjustable Frame Clamp for holding brush blocks while bristles are being drawn.

They hold the chairs upon their knees. The handicap this lack of facilities represents may be better understood by those not familiar with the art of chair caning when it is realized that the work requires the use of both hands; one hand is above and one is below the chair seat during the entire operation. More thoughtful workers and instructors prefer that the chair be placed upon a table, and they stand or sit on a high stool while doing the work. This is much more convenient altho sometimes the chair will slide or rock off the table unless tied or clamped fast. A chair that has a removable seat is more easily handled. The seat is simply removed and clamped to the top

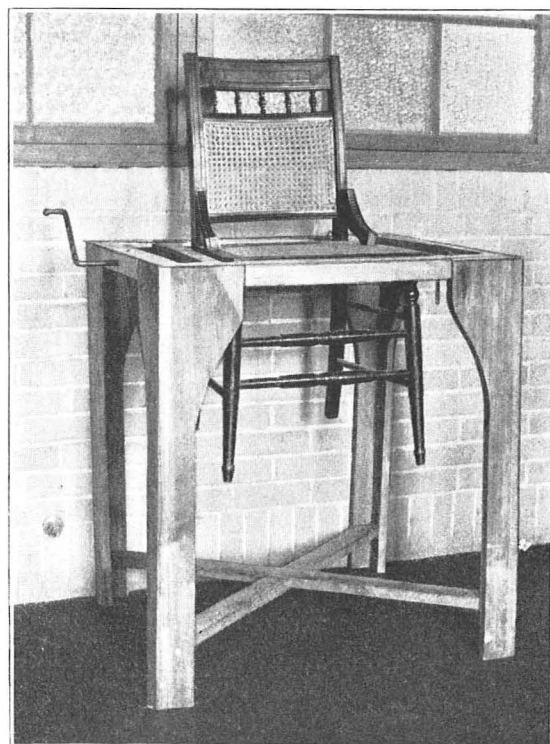


Fig. 10. Chair Caning Work Table, with adjustable frame to fit any size chair.

of a table so that the bottom extends free of the edge of the table. The leverage created in thus caning a frame may easily cause the frame to be broken. To avoid this it became necessary to use two tables, placed the proper distance apart, with the chair bottom clamped to an edge of each table. This supported the chair bottom safely while facilitating the work, but it always seemed to utilize an unnecessary amount of floor space. The practice inspired the idea of an adjustable frame-like table into which all chairs can be put and clamped in place. The legs and rockers of the chairs go right down thru the top of this table. As can be seen the table is but a strong frame with two sliding members adjustable so that any sized chair can be clamped between them. This chair caning table will hold a complete chair or a removable bottom frame equally well. It leaves both of the worker's hands free for the task, while the height is adjusted so that he can sit and comfortably reach every part of the work before him. There is no need of attempting to set forth the advantages which this piece of equipment embodies nor to prove that with its use the work of chair caning adapts itself to the needs of some students, whom it is impossible to reach with this craft under the common condition.

It is hardly necessary to complete the purpose of this article, to continue to enumerate opportunities of this type, which from time to time presented themselves, nor to go to greater length to explain further in detail how these were utilized to make more efficient the work and the workers in whom we are interested. The reader no doubt has already thought of many opportunities for making more efficient the equipment of everyday work and endeavor, and of making the worker too happily more and more efficient.

The nation and its schools have realized the need for sound industrial arts instruction to go hand in hand with all that they have been doing to make good citizens of our boys and girls. But we must realize that an industrial arts education will be of most value to these good citizens of the future, if they can be trained not only to know how to do things thoroly by the best methods then known, but also to think and plan new ways, processes, or methods of producing so that the work of their hands will be more abundant, useful and finer than ever before, and they themselves will be more happily efficient, successful and contented.

## VOCATIONAL ENGLISH

R. Park Parkhill, Rochester, N. Y.



WITH the rapid establishment of vocational education thruout this country, the question of what should be taught in vocational schools along the lines of English naturally arises. Before this question can be successfully answered we must consider two questions: what position in life we are preparing these pupils for and exactly how much use of English their position in life will require.

It is quite generally conceded that the majority of children who enter a vocational course leave school permanently upon the completion of that course. Some of them drop out before their course is completed, and a very few receive further education. It therefore appears that we are fitting most of these children to go out into the world and take their places as workmen in the trades which they have studied. We are not preparing them for further educational activities as is the case with the average pupil in the elementary school.

As to the exact amount of English that they will require in their position in life, very much will depend on the individual. In general, however, I think that we can safely say that the ability to use ordinary English speech intelligently and correctly, the ability to stand and say what they have to say without the usual stammering, hesitant enunciation, the ability to write a decent, understandable letter, the ability to use elementary exposition and description, both orally and in writing, and the ability to read articles

and books with the maximum amount of understanding and enjoyment constitute the most essential things in the life of the average workman in so far as his use of English is concerned.

In the past most of us have erred in our teaching of English thru a failure to consider the life needs of the child. We have labored to teach the child to *write* correctly and left his speech largely a matter of chance. When we stop to consider that in the ordinary affairs of everyday life the average person speaks a word a hundred or more times and writes it once, the conclusion is immediately forced upon us that we should and must place the emphasis upon oral English. If this is true of the average student in the elementary school how much greater is its truth in the case of these vocational students who will do very little writing when they take their places in the world. That is the reason I have placed as the two first essentials of English in the vocational course, "the ability to use ordinary English speech intelligently and correctly" and "the ability to stand and say what they have to say without the usual stammering, hesitant enunciation," and I firmly believe that these two points should receive most of the emphasis in the English work of these students. Oral composition can easily take the place of some of the written composition to the advantage of both the student and the teacher. Corrections made at the time of the error in the presence of other children most certainly will create a deeper impression on the

child than will the return of a paper full of symbols of correction which in the majority of cases is glanced at by the pupil, thrown in the waste basket and immediately forgotten. The teacher instead of wasting time, effort, and eyesight in the fruitless marking of numberless papers would be able to prepare better, more attractive lessons for the pupils and make the English work a thing for both students and teacher to enjoy rather than dread. We all realize that the establishment of correct habits of speech depends on constant and unremitting drill, but some of us have failed to grasp the fact that drill can take numberless forms. Speech games, speech contests, campaigns against specific errors, and other variations may be utilized to make the constant repetition of certain forms less tiresome.

In both the oral and written work with these vocational students the question arises, "Should we teach formal grammar to these boys and girls?" This is a subject fruitful of much argument. Some very good teachers maintain that formal grammar is an absolute necessity while others say that the teaching of formal grammar in this course is a waste of time. Let us therefore consider the aim of the English work in this particular course. We will all admit that the aim is to enable the boy or girl to use correct forms in his everyday speech and writing, not to prepare him for future study in some foreign language or for a deep study of literature and composition. We want to teach him what the correct form *is not why it is correct*. For example, let us consider for a moment one small phase of grammar, the use of the nominative case after the verb "is." If the pupil instinctively recognizes that "It is I," "It is he," and "It is she" are correct, is it very essential that he knows that I, he, and she are in the nominative case and therefore are the correct forms to use after "is"? And it is really easier to teach the child these few necessary forms than to teach him a number of complicated grammatical rules and have him apply them successfully. This fact is true of all common violations of grammatical construction. If the correct form is constantly kept before the student as a standard and he is held up to this standard, in a short time his use of the form becomes instinctive without any knowledge whatever as to why it is correct. In support of this theory I wish to cite a little experiment which I conducted with two classes a short time ago. Twenty incorrect sentences involving common grammatical errors were placed on the board and the class asked to correct them. Seventy-two per cent of the pupils had every sentence correct, twenty-one per cent had nineteen correct, eight per cent had eighteen correct, and the remaining nine per cent had between fourteen and seventeen correct. When asked *why* they made certain corrections, the almost universal answer was, "Because it sounds better." Is it not a waste of time to teach formal grammar when it is possible in less time and with less mental effort on the part of the pupil to teach him to

use the correct form without reference to the reason?"

In considering the second two essential points, very little discussion is necessary. In our letter writing, however, we can very well omit certain standard forms which have been taught. It seems rather unnecessary to teach these boys and girls how to write a formal invitation, and formal notes of regret and acceptance. In place of these we might very well substitute the intelligent filling out of information blanks. It is surprising to know how few people are able to take a blank form and give the information asked for in the space in which it is supposed to go. This is particularly true of blank application forms which are more and more coming into common use. The substitution of oral for written composition has already been touched upon but we should not neglect written composition entirely. In general I would say that written work might follow oral work along some certain lines. Most of our work in composition should be along the general line of telling how something is done or describing something. Narration, if taught at all, should be touched upon very lightly.

When we reach our last essential, we enter upon a subject whose relative importance is perhaps greater than any other point which we have discussed. Everyone reads but not with the maximum of understanding and enjoyment. Sometimes we are ready to believe that our students read with a minimum of understanding, yet knowing as we do that intelligent reading is the basis of all knowledge and all education, we fail to take steps to remedy this fault which we know exists. We feel that it would be beneficial if someone would give our boys and girls the ability to interpret what they read, but as far as we are concerned "we are too busy to do it." We are so busy doing something, the importance of which is, to say the least, problematical that we do not attend to this most important branch of education which is absolutely fundamental. If we can give our students the ability to go to the public libraries and read with understanding the books which are there, we have established in them a foundation for almost unlimited education. Let us, therefore, give this matter of correct interpretation of what our pupils read a great deal of attention, especially in vocational education. Trade magazines, technical books, magazine articles, newspapers, and textbooks give us an inexhaustible supply of material with which to work. Make silent reading and oral interpretation an important feature of your work.

In conclusion we face a problem in Vocational English that is absolutely new. We cannot judge this problem from any of the old, time-honored viewpoints of English teaching. The teacher of Vocational English must change all of his ideas of English teaching, must rearrange all of his material, must discard much that he has considered essential and substitute heretofore unthought-of principles, and finally must himself learn a new kind of English.



# DOMESTIC SCIENCE IN THE RURAL SCHOOL

Mrs. H. L. Lawson, Washington, D. C.



ANY rural school teachers realize the value of domestic science, and would sincerely like to teach the subject in their country schools. When this is the case the battle is half won—but only half won. Many drawbacks-to-be immediately present themselves and these must be overcome.

Often there is an adverse public sentiment, for strange as it may seem, many families do not want their daughters to “waste their time at school with cooking and sewing.” A teacher may wish ever so much to teach domestic science and the community may be sadly in need of instruction, but the teacher will make little progress if the community spirit is antagonistic. To solve this problem the first thing required is a *tactful, efficient* teacher. Next, let the teacher do the regular school work, the work she has been employed to do, if only the three R's, better than anyone else can do it. Never allow the regular school work to be half done and the domestic science class to be the only one that progresses. If this happens it is the domestic science class that will suffer in the end. Finally make each domestic science lesson vitally interesting and extremely practical. In this way even the most stubborn, hardened cases of opposition can be overcome.

Another problem with many teachers is a *lack of training* in the work. It is impossible to teach a subject of which the teacher is ignorant, and yet there are literally hundreds of teachers pretending to teach domestic science when they know nothing, or very little, of the subject themselves. “The subject is popular,” “the people want it taught” or the “state laws demand that it shall be taught” and so these poor teachers “bluff” and in so doing they hurt the cause of practical education far more than they help it. The solution of this problem is to *get training* and *know the subject* before an attempt is made to teach it. In this day of normal schools, teachers' colleges, agricultural colleges and universities it is a simple matter to acquire a working knowledge of domestic science in a short time. Many summer institutes, summer normals and movable schools offer excellent instruction. The agricultural colleges in the several states will send many valuable helps so that the teacher can do much to learn the subject without leaving her own home and there are now several correspondence courses and many textbooks that will prove invaluable to the rural teacher. But whichever way the teacher may choose to prepare herself she should never miss an opportunity to *visit* other domestic science teachers and observe their methods in their classroom if possible. One can always learn by watching another teacher teach. And finally do not be content to teach antiquated methods. First *get in line* and then *keep step*.

Many rural teachers will be confronted with the problem of the *lack of equipment*. Experience has proven that in large city schools where hundreds of pupils must be “run thru the same mill” the best results are obtained when the city owns the equipment, but in rural schools, where, in fact, conditions are more favorable for domestic science instruction, it is better to have the pupils and the homes furnish as much equipment as possible. It may be that a pupil can only furnish an egg or a potato but if she does furnish part of the lesson, it will be much more interesting for her. Therefore, too, the lesson will be much more easily remembered than when the school board furnishes everything. Of course a tactful teacher will never “overdo” this matter of home contributions. Some other devices for providing equipment may be helpful in particular localities; a “kitchen shower” for the school has many times been the means of furnishing a nucleus for the domestic science department; often the manual training class can make much of the apparatus needed; sometimes if the needs are brought to the notice of an interested member of the community he will gladly furnish the equipment; nearly all stores give a discount on supplies for domestic science classes. Again, if there is a Woman's Club in the community they could feel a proper civic pride should they furnish the equipment. The school itself may give entertainments for the purpose, and a “tag day” has often helped. And then really most school boards are not half as bad as most school teachers think they are, about furnishing equipment.

But remember, the help that helps most is the thing which the teacher helps people to do for themselves. Create the desire, make them really *want equipment and domestic science*—and the equipment and domestic science will come.

Perhaps the hardest remaining problem for the rural school teacher will be the *lack of time*, due to short school terms, and an overcrowded curriculum. When a teacher has perhaps all eight grades to instruct in one room with only a five or a seven-month term of school, and she is attempting to make every pupil finish the work the city schools cover in nine or ten months with only one grade in a room, she will really find little time for separate domestic science classes. There are, however, many ways she can meet this problem, but the majority of ways that have proven most successful group themselves into one of the five ways described below. Perhaps only one of these methods will fit the needs of a single school but if a teacher can use all of them so much the better. Undoubtedly they will need to be adapted to the school and to the special needs of the community.

First there is the *laboratory system*. This, of course, requires a school laboratory where experi-

ments may be performed in a scientific manner, and it also requires a special, set class period. This is the system most in vogue in city schools. It has been adopted in many rural schools and very creditable work has been accomplished even when it has been impossible to fully equip a scientific laboratory. While many teachers use only one class period a week—say, for example, Friday afternoon after recess—many teachers have had unusual success using the noon hour. This is especially successful when the pupils live at some distance from the school-house and must bring a cold lunch. Why is it that all agree a working man needs a warm meal and so often forget how much more essential warm, nourishing food is for a growing child? The furnishing of hot lunches for cold children offers a great opportunity for domestic science instruction. In some schools this has taken the form of the popular “penny lunch.” The food is prepared by the advanced domestic science pupils and served to the others in cafeteria style. In other schools the uncooked lunch is brought from home and is prepared in a systematic way by the class at school. A cup of chocolate, a simple custard, a dish of soup, or a bowl of broth can be prepared in any rural school. The addition of one dish of hot food to supplement the usual lunch the child will bring from home will make a wonderful difference in the way the child will accomplish his regular school work in the afternoon.

Do not, however, yield to the temptation to do unsystematic work in a hit-and-miss fashion. Have a definite outline, adapt it to the needs of the school, but do systematic work.

Another system that has received national recognition is known as the *Home Credit System*. The teacher at school assigns definite tasks to be done at home and credit is given at school for their accomplishment. For example, the teacher may give the girls a recipe for bread, explaining in detail each step in the process. The girls make the bread at home in their own kitchen, bringing the finished loaf to school, where it is scored and judged.

Much information about this system has been collected by the United States Commissioner of Education, Washington, D. C., which he will send to interested teachers if they will ask for it. Perhaps Oregon is the state to which we are most indebted for the development of this idea or system. By writing to the state superintendent of public instruction and requesting information very valuable pamphlets and printed matter will be sent to any teacher.

Very similar to the home credit system are the *Girls' Clubs*. This system is usually under the supervision of the extension department of the state agricultural college. The most popular of these at present are the girls' canning clubs. Definite instructions are furnished by them to the clubs of girls. The girls do the actual work, perform the experiments, keep

notes, etc. The leaders from the experiment station grade the finished work and prizes are awarded. Perhaps the most valuable of these prizes is a trip to the state encampment where additional instruction is given. The teacher in the rural school, by working directly with the agricultural college, organizing, guiding and instructing the girls, can find unlimited possibilities in domestic science work.

If, however, the teacher prefers to hold her domestic science classes independent of help from the agricultural college, she may find it advisable to organize a *system of co-operation* with mothers in the community. There is always some housewife in the neighborhood who can make bread better than anyone else in that locality. She will take much pride in teaching a class of girls to make it as she makes it, if the teacher requests her to do so. The next week some other housewife may teach the girls to clean and roast a chicken. Another time they will learn to make a cake. The teacher will locate and co-operate with these members of the community for the good of the school. She should also supplement the lessons with instructions in the classroom. This method has proven especially successful when the rural teacher has not had all the training and experience that may be desired and yet realizes the need for instruction in domestic science, and aids her school to profit by putting into use the practical experience some housewives have gained.

But perhaps the best way for the rural teacher who is laboring under the handicap of a short term and an overcrowded curriculum is the *system of correlation*—the system of relating every subject in the curriculum to every other subject. This is the most practical way to present practical education. Take for an example a lesson in the science of mathematics; instead of spending weeks and months doing problems that are meaningless to the child make the lesson interesting by connecting it up with the everyday experience of the child. Correlate the arithmetic lesson with the domestic science lesson and make them one. Instead of just adding long columns of figures, add the items on a grocery bill. Instead of merely learning to multiply because the book says to multiply, find out how much sugar it takes to make four fruit cakes, or how many yards of goods it will take to make a dress and what that dress will cost if it is purchased at the local store. The average eighth-grade pupil does not know how many yards of material are needed to make a bed sheet, yet they are generally supposed to finish (?) the subject of arithmetic in the eighth grade.

Correlate the domestic science lessons with the spelling lessons. Make lists of words used in the local community. Consider the needs of the child and teach him to spell the words he will use in everyday life. Is it not more sensible that a child can spell “butter, sugar, flour, and mayonnaise” than that she can spell the longest word in the English language?

In the language lessons the same principle should be applied. Much of the extremely technical grammar that is attempted in the elementary schools is absurd and the rest of it should be left to high school or college. The time could much wiser be spent in teaching the child how to shop.

Some wise psychologist has advised us not to try to teach a geography lesson on the animals which inhabit strange lands and pull down the curtains so the pupils can't look out of the window to see a circus parade pass. Every geography and language lesson contains a wealth of material for domestic science lessons. There is no more practical way to teach physiology than by correlating it with domestic science. Every subject in the curriculum correlates with domestic science.

Draw your domestic science lessons from the sources nearest at hand, use them for the vital part

of the regular school work, correlate them with every subject in the curriculum and they will never prove a burden to the overworked rural school teacher, with her short terms and her overcrowded curriculum. The true teacher trains for life,—and *with life*.

One argument often advanced by the "old school" of teachers against domestic science instruction is that if we make the education of the child practical we will then lose sight of the cultural in education. But by taking advantage of correlation the two are combined into such harmony that the practical is cultural and the cultural is practical. It will be impossible to draw the definite line between them that exists in many schools today. In other words combine the domestic science (the practical) with the cultural subjects and make not an added subject to the curriculum, but a rounded out, completed whole education.

## Keeping the Case Straight in the Printing Class

John L. Deal, Instructor in Printing, Rochester, N. Y.



FROM time immemorial there has been a constant struggle, especially when there are any beginners in a printing office, to keep the letters in their respective boxes, or as printers say, to "keep the case straight."

Perhaps it might be of interest to hear how this result has been fairly well attained in a manual training room in printing, where over two hundred boys use the same cases of type.

The type equipment consists of one case of 14 point Century Old Style, one case of 10 point small caps, one case of 10 point italic and twenty-two cases of 10 point Century Old Style. These cases are used by over ten classes, from 6-a to 8-a inclusive; the average attendance of each class is about twenty. Practically each case is used by ten different boys. How to keep the cases "clean" is the problem. The following solution has worked very well in at least two cases:

The cases are numbered from one to twenty-five and, in each class, each boy has a case with a certain number assigned to him. He takes the same case every time he comes to class, and his number is entered after his name in the class record.

First an ordinary pad book and a sheet of paper was issued to each member of the first class of the term. The cases had already been placed upon the desks, and the pad backs were placed on the cases, and used to write upon. The paper was ruled off vertically into a number of columns and the first boy to have the case entered his name at the top of the first column. He then set up every letter in the lower case (a) box and entered on the sheet, in the column under his name, the number of errors found in this box. He continued to sort out the boxes of the lower case in alphabetical order until the end of the class

period and returns his case to the rack, with the card and sheet of paper included.

The next class appears and the boy having case (let us say No. 5) enters his name at the top of the second column and continues to sort out the case in alphabetical order, starting where the boy preceding him left off.

This method is carried out until the lower case, points, figures, capitals, other characters and finally quads and spaces have been sorted, taking perhaps two weeks or more, and perhaps the same boy or boys working on the same case two times or more.

The boy who sorts the spaces, having ascertained that all the letters and characters have been looked over and that he completes the spaces, requests the instructor to O. K. the sheet, which has been kept with the case and which shows how many different boys have worked on the case and just how much each boy accomplished. This boy who requests the instructor to O. K. the sheet, assumes the responsibility that all letters and characters have been sorted out, and he very easily can do this by consulting the sheet.

The instructor writes on the board, in a pre-designated space, the number of the case and the date of O. K., as well as the class of the boy who asks for the O. K.

Now let us follow case No. 5 further. After the case has been O. K'd, the next boy to take it may spend the first few minutes of the class period in briefly examining the case to see if there are any mistakes in it. If there are three or more mistakes in any one box, the boy will ask for and make out a complaint sheet having the following items:

- 1st: Name of complainant.....
- 2nd: Date.....
- 3rd: Class of complainant.....



4th: How many mistakes in what box.....

This complaint sheet is taken up at the end of the period and examined and assigned to the boy responsible for the errors.

If the case has just been sorted, the error is entered against the boy who has sorted the box. If the case has been distributed in or used to set type from, the error is entered against the boy who last used the case. If for any reason the boy in the class just preceding the complaint has not used the case, the error is placed against the boy in the next preceding class. This can be ascertained by consulting the class record.

When it has been determined who is responsible for the error and his class, it is entered against him in a pre-designated place on the board which has been assigned to his class in the following manner:

Name of boy having case.....

Case No.....

How many mistakes in what box.....

Complaint made by.....

This method has been found to be very efficient for the following reasons:

1st: A spirit of class rivalry can be started along lines of accuracy in keeping the cases straight.

2nd: An accurate check can be kept on the scholar and any repeated mistakes remedied.

3rd: In one week any point not understood by the scholar can be detected.

4th: The game principle can be introduced into the lesson.

5th: Speed and accuracy can be obtained for the reason that the cases are in good order.

6th: Finally, the cases really are kept in an excellent condition.

As the scholar takes up more advanced projects he can do so with the confidence that he can attain better results and a better give-and-take attitude is engendered in the class. If he starts out to set type after rapidly looking over his case, and has proceeded a short time and comes across a box with wrong letters in it, he stops and takes out all the letters or characters in this box, and if he finds three or more mistakes he enters a complaint after the manner indicated above. (It will be noted that all complaints are made against errors and not against any boy. This point cannot be overestimated.)

Thus it can be seen, and thus it has been established—that the complaint system of keeping the cases straight, has proven in at least two cases to meet a real need and has attained a very gratifying result.

## WHAT OUR BOYS ARE DOING THIS YEAR

Garrah M. Packer, Supervisor of Manual Training, Consolidated Schools, Cedar, Iowa.



THIS is our first year in our new consolidated school building which, like many others of its kind, was hard to obtain. Some were skeptical as to the success of the school, while others were not so sure as to the real value of installing the manual training and domestic art departments.

Of course the building was done under contract. For some unknown cause the contractors declared the structure completed and succeeded in getting away without everything having been finished. Once gone they were not to be gotten back. Besides the unfinished work there were also many things in the way of equipment that we were in great need of to carry on the work of the school and which of course, would be of great expense if we had to buy, so the following was the solution of our problem.

I took my manual training course of study and so arranged it that my classes might do the required work for credit.

We commenced first on the library, as our books were in very bad order. When finished and books in place, it did credit to any class or school.

Instead of making the work bench in the dark room into cupboards, the workmen just boxed it, leaving no room whatsoever for storage, so doors were cut and hung and shelves placed. We next braced the wardrobes in each room.

The primary room wished to take up weaving and to build in the sand but had neither looms nor sand table, our next tasks. We made a set of one large loom, rug-size, and twenty small ones. The large loom was made first, the children doing their first rug as community work. The mats made on the small looms, when completed will be sent to the domestic science room for use there. Thus there is not a child in the whole school who will not have the joy of making or helping make for some other department. The sand table seems to afford the greatest enjoyment for many can work at once.

Our locker space was very limited for the number we had to accommodate and our tools were badly kept because of lack of room. Our benches were converted into lockers and a tool cabinet was made, large enough to hold all the tools we have at present and those we shall have in the near future.

In the second and third rooms the dictionaries were badly used because of no special place for them, so holders, which are proving very satisfactory, were constructed and fastened on the walls.

The agricultural class gathered seed corn to be tested in the Spring, thus the necessity of corn trays. We set about the construction of seventeen, one of them closed with a glass front, for a sample tray.

The decision for the giving of a play before the Christmas holiday vacation called for stage curtains

and scenery. This time the manual training and domestic art departments combined, made and put up good canvas roller curtains and placed the scenery.

As the agricultural and commercial geography departments needed seed cases and a cabinet for the storing of specimens collected, their needs were supplied by the willing workers.

There were many old seats of the best of lumber brought in from the various schoolhouses that could not be used. These we tore to pieces, put the lumber into the shop and piled the iron of several hundred pounds to be sold, the proceeds to be turned into the manual training fund.

Our principal's office was as devoid of shelves, files, etc., as the rest of the building. Here we used some of our good lumber from the seats to make some of the necessary equipment.

We have many excellent bulletins and clippings for which we are making files.

Each child is required to make a mechanical drawing of each project he makes before it is begun, and in addition blueprints are required of the high school class.

Most of the patrons have visited our school and they are no longer skeptical as to the value of the new departments for they have seen the proof for themselves and are proud of the work.

The children have not only learned how to make, but something of the finishing of a project as well, for each project was finished in some appropriate manner. They are more critical of their own work and are more careful of the school building in general because they have a pride in that in which they are personally interested.

The course has been so far, and will continue to be for the rest of the year, less expensive both to the children and the school district. The child will not have to buy so much lumber, etc., for his course, yet he will have the knowledge and experience gained in the work. Such work is certainly less expensive to the school district because it has only to pay for the lumber used while the children are the workmen.

All told, the experiment has been a most satisfactory one.

## THE STORY OF THE W. S. S. SCHOOL POSTERS

Royal Bailey Farnum, Specialist in Art Education, New York State, and Chairman of the National Committee for War Savings Poster Contest



"WHAT can the schools do?" This was the question which was abruptly put to me when I met some of the W. S. S. Committee during a trip to Washington in November, 1917. I replied, "Posters!" "What would a competition cost?" came the question and, thinking only of a few of the Eastern states, I answered, "\$150.00." Immediately the third question was put to me, "Is that enough?" Upon my reply that I had spoken only hurriedly and without deliberation, Mr. John F. Harris, Federal Director for the East, said "Go back and think it over."

It was thus that this nationwide competition had its beginning. At first plans were developed only for an Eastern competition with the first sum, hastily stated, doubled, making \$300. As the scheme developed it seemed to be feasible on a national scale. A telegram from Mr. Andrew Ten Eyck, then acting as educational director at Washington, called for immediate delivery of the national plan. The writer was in New York at the time and the message was delayed, arriving in the late afternoon. A hurry call to J. Winthrop Andrews, of Yonkers, one of those art directors who is always ready in any emergency, brought him to the National Arts Club where by midnight the complete rules and regulations were thrashed out.

Then followed anxious days while the question of prizes was discussed. Finally a letter from Mr. Vanderlip gave assurance that they would be forthcoming and the plan of campaign commenced.

Four group leaders or chairmen were needed first. Letters were sent to C. Edward Newell, Director of Art at Springfield in the East; Emma M. Church, Director of the Church School of Art, Chicago, in the Middle West; Ellsworth Woodward, Director of Sophie Newcomb School of Art, Tulane University, New Orleans, in the South; and Professor Arthur B. Clark, Stanford University, California, in the West.

From California came a wire saying, "Great scheme—Accept western chairmanship as requested!" From the East and South and Middle West came letters of cordial acceptance.

The next move was to get state chairmen. A letter was dispatched to Milton Bradley Company soliciting their aid in securing the names of art teachers who would be good candidates for this service. A reply from the manager, Mr. Clark, stated that Milton Bradley agents thru the country were being notified to send in names to Albany. This aid was invaluable. These names plus others personally known to the writer gave an almost complete list of state chairmen. Others were suggested by the group chairmen. This necessitated much correspondence and consumed some time.

A national committee was meantime formed consisting of five honorary members: William Howard Taft, John H. Finley, Robert W. de Forest, Lorado Taft, and Ida Tarbell, the four group chairmen, and C. Valentine Kirby, Henry T. Bailey, Dr. James P. Haney, Harry W. Jacobs, J. Winthrop Andrews and the writer. This committee was large-

ly advisory, checking up plans and offering suggestions when needed. Mr. Kirby took entire charge of circularizing the art schools.

Meantime the rules and regulations were published in the February number of this magazine and the American Art Student and in the March numbers of the School Arts Magazine and the American Magazine of Art. State War Savings Committees now began to give the competition some publicity and the W. S. S. Committee at Washington caused complete copies to be sent to all superintendents in all cities of 2,500 and over. In addition a number of the states issued special notices, and local prizes were offered.

The first newspaper notices of the campaign were in an evening edition of some of the New York papers in December. The very next day the following letter was received at Albany:

Dec 21st-17—W 112 Strat, City.

Dear Gentleman

permit me to inform you this, as describe in the evenin post on friday night about designs for the Wss Thrift Stamps I should like to give my good servises to this effect. I am not an art student; but can give my part as well as them, this is 2 designs for you in the matter take good notice of the form and way as I prscribe to you I can not draw, but can instruct you as well, We has a Jeneral in France who is there for a good purpose please have a stamp like the ordinary ones made only instead of U States Postage on top, print U S A on the top, and W S S on the bottom you no the meanings, United States of America War Saving Stamp, the general means saving of the Nations. Now that the 1st



*1st general  
finishing  
figure*

*1st. president  
Washington  
coat of arms*

This is the second our first president Mr George Washington, he was the beginning of the Nation and you no what he did Just a little change in the stamp this tim instead of his picture in the middle engrave his coat of Arms there with U-S in the top corners, and in the bottom T. S United States Thrift stamps these two designs beats all the others that you will get. I am a holder of Liberty bonds a member of the Red Cross And would like to buy a war saving stamp my self, but not until you have done the designs that I have made, and I wants to wear the badge that the winner gets there for designs, have also got a congradulation from the Naval consulting Board for submarins inventions. This is a slight picture of the stamps how they would look on the finishing up

please give an early Answer

Mr. R. B. New York City.

The competition was indeed launched.

The good work of "carrying on" was now in the hands of the teachers. Dates were set by group and state chairmen for the completion of the work. In one or two instances more time was given but in general all dates were adhered to with complete success.

Pupils and teachers worked with energy. At first the teachers asked, "Where shall we get our

ideas?" Later they said, "The children are full of ideas—we are swamped with them!" On every hand came reports of enthusiastic interest and a unanimous spirit of loyalty and service. It seemed as if art teachers had only been waiting for an opportunity to aid the country and here was a welcome chance.

Literally thousands of posters were made and hundreds are now doing local service. As the time approached for the submission of the designs the work was speeded on with zeal. The school first made its elimination. In the larger cities the art director made the next elimination, sending only the best ones to the state chairman and his committee. It was now the state chairman's task to eliminate all except those which were likely to stand some chance of winning a coveted prize. Many states had their own juries for this. The state chairman then sent the posters on to the group committees for the group judging.

Following are a list of these group winners:

Name	Address	Group	Class	Award
Sgt. Chas. A. Dunn, U.S.A.	Washington, D.C.	E.	A	Na'l Winner & First Prize
Katherine Mallett	Norwich, Conn.	E.	A	Second Prize & Special M.
C. A. Gage	Brooklyn, N. Y.	E.	A	Second Prize
Paul R. Lang	Brooklyn, N. Y.	E.	A	Third Prize
Francesca V. Drew	Swarthmore, Pa.	E.	A	Third Prize
Edith D. Coyle	Philadelphia, Pa.	E.	A	Third Prize
Florence I. Mayer	Newport, R. I.	E.	A	H. Mention
Katherine McNeely	Providence, R. I.	E.	A	H. Mention
Kathryn Clough	W. Medford, Mass.	E.	A	H. Mention
Clara M. Christopherson	Buffalo, N. Y.	E.	B	First Prize
Marion Candell	Buffalo, N. Y.	E.	B	Second Prize
Gerald E. Mahoney	Buffalo, N. Y.	E.	B	Second Prize
Ralph M. Boniface	Buffalo, N. Y.	E.	B	Third Prize
Claremont Hudson King	Buffalo, N. Y.	E.	B	Third Prize
Alice Cobbe	Utica, N. Y.	E.	B	Third Prize
Mary Agnes Brown	Buffalo, N. Y.	E.	B	H. Mention
Douglas A. Schoerke	Buffalo, N. Y.	E.	B	H. Mention
Dorothy Tyler	Buffalo, N. Y.	E.	B	H. Mention
Margaret P. Hazen	Johnston, Vermont	E.	C	First Prize
George Strehler	Johnstown, Pa.	E.	C	Second Prize
N. W., John W. Schmidt	Buffalo, N. Y.	E.	C	Second Prize
Franklin Chattin	Newark, N. J.	E.	C	Third Prize
Theodora Smith	Yonkers, N. Y.	E.	C	Third Prize
Emily V. Parley	Baltimore, Md.	E.	C	Third Prize
Arthur McNary	N. Britain, Conn.	E.	C	H. Mention
Gus J. Fries	Johnstown, Pa.	E.	C	H. Mention
Jacob Garfinkel	Newark, N. J.	E.	C	H. Mention
Emily Langham	New Orleans, La.	S.	A	First Prize
Eunice Baccich	New Orleans, La.	S.	A	Second Prize
Ellen D. Trabue	Nashville, Tenn.	S.	A	Second Prize
Adelaide Bowen	New Orleans, La.	S.	A	Third Prize
Dorothy Blakely	New Orleans, La.	S.	A	Third Prize
Helen S. Salter	Nashville, Tenn.	S.	A	Third Prize
John Waters	Summit, Georgia	S.	A	H. Mention
Mrs. Edward Potter, Jr.	Nashville, Tenn.	S.	A	H. Mention
Miriam Danziger	B. B. Car Poster	S.	A	H. Mention
John Douglas	Oklahoma, Okla.	S.	B	First Prize
Lloyd Foster	Savannah, Ga.	S.	B	Second Prize
Marie Stanley	Oklahoma, Okla.	S.	B	Second Prize
Brunel Faris	Oklahoma, Okla.	S.	B	Third Prize
Rose Powers	Winter Park, Fla.	S.	B	Third Prize
Daniel A. Garza	New Orleans, La.	S.	B	H. Mention
Will Griffin	Atlanta, Ga.	S.	B	H. Mention
Sara Bruce Hobbs	Gainesville, Ga.	S.	B	H. Mention
Anita Lehlley	New Orleans, La.	S.	C	First Prize
Lillian Garitty	New Orleans, La.	S.	C	Second Prize
Elizabeth Thesmar	Savannah, Ga.	S.	C	Second Prize
March Owen	(South)	S.	C	Third Prize
W. Robert Little	Savannah, Ga.	S.	C	Third Prize
Inez Helmken	Savannah, Ga.	S.	C	Third Prize
Frances H. Jones	Savannah, Ga.	S.	C	H. Mention
Marion Hesse	Savannah, Ga.	S.	C	H. Mention
Philip Miller	Milwaukee, Wis.	M.W.	A	First Prize
Marcia Smith	Cincinnati, Ohio	M.W.	A	Second Prize
Frances M. Crosby	Milwaukee, Wis.	M.W.	A	Second Prize
Roland Triann	Milwaukee, Wis.	M.W.	A	Third Prize
Helen Davies	Oberlin, Ohio	M.W.	A	Third Prize
Wilbur Adam	Cincinnati, Ohio	M.W.	A	Third Prize
Marguerite Wildemuth	Chicago, Ill.	M.W.	A	H. Mention
May O'Brien	Chicago, Ill.	M.W.	A	H. Mention
N. W., Edmund Kressy	G'd Rapids, Mich.	M.W.	B	First Prize
Theo. K. Ahrens	Cleveland, Ohio	M.W.	B	Second Prize
Elizabeth Stover	Chicago, Ill.	M.W.	B	Second Prize
Theodora Teusau	G'd Rapids, Mich.	M.W.	B	Third Prize
Grace Jans	Minneapolis, Minn.	M.W.	B	Third Prize
Kathryn Foster	Indianapolis, Ind.	M.W.	B	Third Prize
Frances Royster	Indianapolis, Ind.	M.W.	B	H. Mention
Margaret Thelen	Independence, M.W.	M.W.	B	H. Mention
Mary Helen McDowell	Rockford, Ill.	M.W.	C	First Prize
Mary McColley	Columbus, Ohio	M.W.	C	Second Prize
Le Roy Berg	Rockford, Ill.	M.W.	C	Second Prize
Marion James	Oshkosh, Wis.	M.W.	C	Third Prize
Oscar Garant	Cedar Rapids, Ia.	M.W.	C	Third Prize
Julia Sayles	G'd Rapids, Mich.	M.W.	C	H. Mention
Jack Verhage	Cincinnati, Ohio	M.W.	C	H. Mention
Florence L. Cole	Oakland, Cal.	W.	A	First Prize
Marjorie Judy	Seattle, Wash.	W.	A	Second Prize

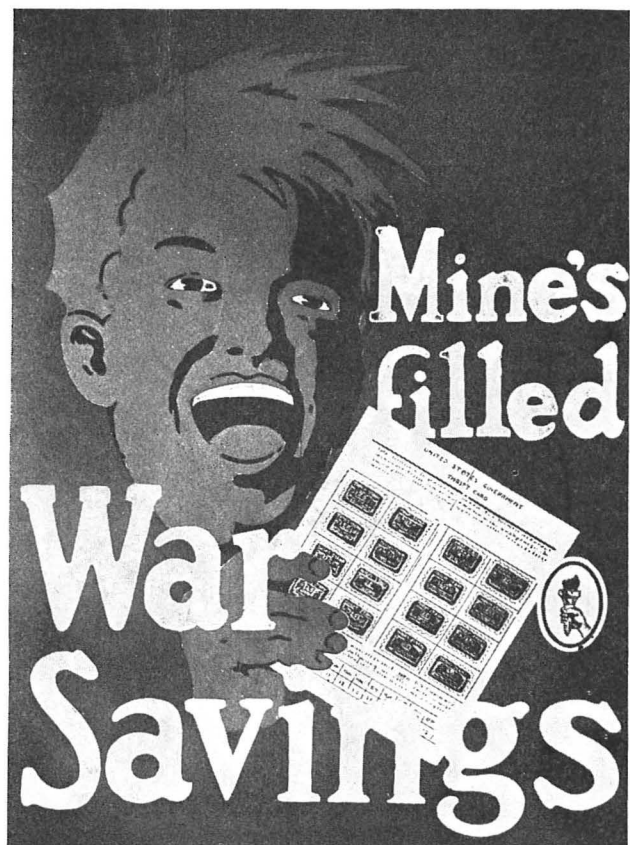


Name	Address	Group	Class	Award
Charles W. Savage, Jr.	Berkeley, Cal.	W.	A	Second Prize
Alice Macgregor	Berkeley, Cal.	W.	A	Third Prize
Chester Gore	Berkeley, Cal.	W.	A	Third Prize
Gertrude Day	Berkeley, Cal.	W.	A	Third Prize
Bula W. Moseley	Oakland, Cal.	W.	A	H. Mention
Margaret Palmer	Berkeley, Cal.	W.	A	H. Mention
Edwina Van Duser	Seattle, Wash.	W.	A	H. Mention
Walter Bicknell	Denver, Colo.	W.	B	First Prize
Chas. Palmer	San Francisco, Cal.	W.	B	Second Prize
Irene Ware	Portland, Ore.	W.	B	Second Prize
Edwin Schaller	Denver, Colo.	W.	B	Third Prize
Lucy Roberts	Los Angeles, Cal.	W.	B	Third Prize
Harold Grieve	Los Angeles, Cal.	W.	B	Third Prize
Alfred Dana	Oakland, Cal.	W.	B	H. Mention
Andy McGrew	Denver, Colo.	W.	B	H. Mention
J. Edward Asher	Phoenix, Ariz.	W.	B	H. Mention
Oscar Zureibel	Denver, Colo.	W.	C	First Prize
Marjorie Noman	San Francisco, Cal.	W.	C	Second Prize
Loretta M. Kenchan	Denver, Colo.	W.	C	Second Prize
Dorothy Hanchett	San Francisco, Cal.	W.	C	Third Prize
Elizabeth Lippincott	Los Angeles, Cal.	W.	C	Third Prize
Lesta Rosesteel	Los Angeles, Cal.	W.	C	Third Prize

The group chairmen now sent the prize posters, only, to the Art Alliance of America, where well lighted galleries were kindly offered for the purpose of exhibiting and finally judging the work. Including the honorable mentions which were granted with few exceptions, there were one hundred and eight designs, 27 from each group of states. They made an admirable showing, no two ideas being alike and all admirably well done in their class.

The final or national jury consisted of F. D. Casey, Art Editor of Collier's, chairman, F. G. Cooper, Poster Artist, Walter Whitehead, Ray Greenleaf, Art Manager, Ward & Gow, and J. H. Chapin, Art Editor, Scribner's Magazine. Their duty was to choose the single best poster in each class. As might be expected there was considerable discussion.

The first question to be considered and settled was whether the drawings should be judged for their potential value or as they stood. It was finally



National Winner, Class B. Edmund Kressy, Cleveland, Ohio. Chosen for its poster quality and unusual selling power.



National Winner, Class A. Sgt. Charles A. Dunn, Washington, D. C.

decided that their present state was the only fair way on which to base their choice. Otherwise they would be adding their own professional ideas to the contestants.

Other questions considered were their "selling value," their "general or class appeal," their "active or static effect," their "color harmony," their "re-productive qualities" and their "originality."

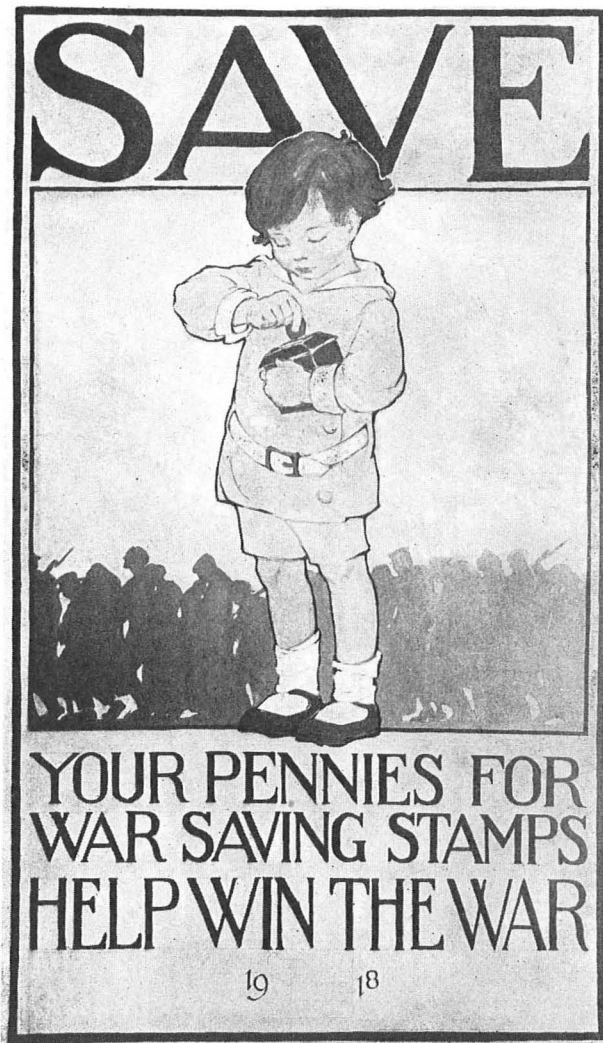
One of the jury was a little late. The other members were standing before the high school designs, Class B. As the late juror approached the others he glanced over the wall surface, and said, "A rather high standard, isn't it?" Instantly the others replied, "It's very high." Then followed a word of even higher praise. "Ten years ago," remarked one of the best poster artists of this country, "if we fellows had dreamed of being able to approach this degree of poster excellence we would have considered ourselves marvels."

The national winners are: Sergeant Charles A. Dunn, U. S. A., Washington, D. C.; John W. Schmidt, Buffalo, N. Y.; Edmund Kressy, Cleveland, Ohio.; Katherine Mallett, Norwich, Conn., National Honorable Mention, Class A.

Following the exhibit in the Art Alliance galleries the drawings will be sent to Washington where the American Federation of Arts will organize them into a travelling exhibit which will tour the country next fall and winter, still carrying their message of thrift and the loaning of quarters to the government.

Twenty-six different states are represented among the winners as follows: Connecticut, District of

Columbia, New York, Pennsylvania, Rhode Island, Massachusetts, Vermont, New Jersey, Maryland, Louisiana, Tennessee, Georgia, Oklahoma, Florida, Wisconsin, Ohio, Illinois, Michigan, Minnesota, Indiana, Iowa, California, Washington, Colorado, Oregon, and Arizona. This would indicate that no one state or section of the country has a monopoly in the production of creditable art work. But in addition to this interesting result there is the greater achievement of thousands of school students making



Awarded National Honorable Mention. Considered the best poster submitted, but finally rejected as it did not conform to the size generally understood. Miss Katherine Mallett, Norwich, Conn., received a second prize in Class A. Eastern Group for a second poster entered in the competition.

thousands of posters for the country's cause. No one can possibly estimate the great good that has been accomplished. The school population of the country devoting its earnest efforts thru its art department in a united and common purpose to produce designs to "help win the war" is no small attainment. If nothing else be gained it has shown that the school art departments can meet a war emergency measure on a nationwide scale.

There has been a considerable amount of labor, personal expense and anxiety connected with such



National Winner, class C. John W. Schmidt, Buffalo, N. Y. Chosen for its fine technic in cut paper, its direct appeal and its carrying power.

an undertaking but the undoubted gain to the nation, to art education and to every individual who in any way rendered service in the competition makes it a lasting and satisfying pleasure.

The following letters serve to indicate the notable support which this National School Poster Competition has had:

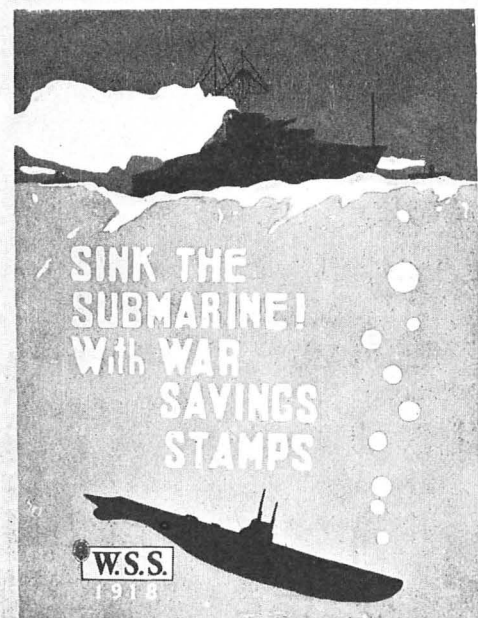
May 20, 1918.

My dear Mr. Farnum:

I have your letter of May 8th. I have no objection to your putting me down as an honorary member of the National Committee which you describe. I do think that the need for stirring the imagination of the Americans and their souls to an appreciation of the crisis we are in and the necessity for everyone doing his part, has called out a lot of beautiful posters which are highly stimulating to patriotic endeavor. I have no claim to a knowledge of art, or the possession of an artistic sense. I only know how things affect me. That must be my measure of the success of a poster. By that measure I would say that great work has been done and that great work is likely to be done in this matter. I believe, too, competition will accomplish much in further progress.

Sincerely yours,

(Signed) Wm. H. Taft.



An Honorable Mention, Class B, by Dorothy Tyler, Buffalo. One of the two posters considered a close second for the national award. Finally rejected because of the inaction and feeling of serenity at the top.



The First Prize poster in class B, Eastern Group by Clara M. Christopherson, Buffalo. A close second for the national award. Considered because of its beautiful color scheme, strong word appeal and fine technic. Rejected because of its static quality.

New York, May 14, 1918.

Dear Sir:

I have a deep interest in having our war posters artistic and properly located. It is an educational opportunity in good taste, which should not be missed. Unfortunately it is only too frequently being missed and some posters used in the past for national causes have been artistically obnoxious. It is a mistake to suppose that artistic posters do not attract or that unworthy posters do not work harm to the effort they are intended to advertise. I will be glad to be named as an honorary member of the national committee.

Very truly yours,  
(Signed) Robert W. De Forest.

Chicago, 6016 Ellis Ave., June 9, 1918.

Dear Mr. Farnum:

I have watched the results of the children's poster competition with intense interest. A concrete proposition always appeals to youth with vastly more significance than an abstract theme. When the subject is as inspiring as the one now offered it is not strange that the results show enthusiasm and the best work of which our young artists are capable.

America is fighting for the things of the soul; where should she find more loyal support than her artist army? Art is the great universal language. Let us today express in it our highest



A Third Prize from the Western Group, Class C, by Lester Rosesteel, Los Angeles, Cal. A close second for the national award in Class C. Rejected because it lacks the appeal to buy, the bird being inactive and placid.

aspirations and appeal to every lover of liberty, the world around.

Cordially yours,  
(Signed) Lorado Taft.

New York, June 4, 1918.

My dear Mr. Farnum:

I am glad to say a word of encouragement for the competition for a W. S. S. Poster which you have in operation in the upper grammar grades, high schools and art schools. It is not alone that such a competition arouses the interest of thousands of young people—and freshens that of their elders—in the thrift campaign; that of course is the first and best of reasons for it. There are two secondary results of enormous importance to my mind. The first is, that such an interest is bound, in a degree, to soften the hardening effects that war has upon young minds. This is one of the many awful results of war. Everything that counteracts it is beneficent and certainly one of the most humanizing things in the world, is the 'effort to make something beautiful.' Then too, as a stimulus to sensible art effort there is much to be said for this competition. The student is forced to get his idea from the materials at hand. It sets him to thinking of art as something related to the world in which he lives, not as something outside and artificial.

These are two great by-products, my dear Mr. Farnum, I hope you will have all success in the competition.

Yours very truly,  
(Signed) Ida Tarbell.

**“W**E cannot concentrate our attention on pictorial and graphic art, and come to regard it as the one form worth pursuing, without losing our sense of construction and power of adaption in design to all kinds of very different materials and purposes—that sense of relation—that architectonic sense which built up the great monuments of the past.”

—Walter Crane.



# INDUSTRIAL-ARTS MAGAZINE

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## EDITORIAL

### THE CITY BOY ON THE FARM.

IT is reported that eleven thousand high school boys were sent in the spring from the city schools by The Boys' Working Reserve to work on the farms of the middle west. Many boys went from the large city schools to the farms on their own initiative and the total number of city school boys in this service must be much greater than the number recorded by the Reserve.

This army of young Galahads have been inspired with patriotic service. Of course the prospect of good wages was inducing. Then too the prospect of a summer in the open may have had attraction for the city boy, but we are inclined to the thought that after the first day on a farm it is the same patriotic sense of duty that holds the city school boy to farm work that holds his older brother to faithful work in the camps and trenches. Farming no less than war is hard, continuous labor. That first morning on the farm in June was, no doubt, glorious to the city boy. He probably went at his work with the energy and enthusiasm that had won five yards of coveted ground on the foot-ball field but on the farm ground is measured in acres—acres that must be won to production by constant and unrelenting war on clods and weeds.

We surmise that the romance of farm life waned with the setting sun of that first day the city boy worked on the farm. The second day seemed even longer than the first and perhaps the city boy slacked a little to ease his blistered hands. The third day tested his soul.

Sore in every muscle he plodded thru his work and hoped for rain to stop the game. Then came the first reward for the boy found that nature was adjusting him to his work and the discovery gave him a satisfaction that he had not experienced before. Gradually he realized new strength and independence. He could keep pace with his fellow workmen. He could do a man's work and could do it without suffering. He had learned to conserve his energy. He had learned to work.

Only incidental reports have come of the extensive movement to place boys on the farms. One farmer says "I had two boys on my farm who worked one day and returned to the city in the evening to find another job." Another farmer reports that two boys on his farm are doing very well. There is great

difference between boys and there is great difference between farmers.

The Boys' Working Reserve attempts to keep supervision over boys placed on farms. In one case a boy placed on a farm by the Reserve was induced to work for a neighboring farmer by the offer of higher wages. On learning of the incident the boy was recalled by the Reserve officer and both farmer and boy were threatened with blacklist. This lesson in ethics should do much to remind the boy and the farmer that they are in the national service and under obligations peculiar to the great needs of war.

We believe the city school boy will prove himself faithful to the service imposed upon him. The school has given him little preparation for work on the farm. It is hoped that much will be done in another year to teach the city boy to do some of the many things required of him on the farm. There is no more fruitful field for industrial training in the schools than this.

### VOCATIONAL EDUCATION OVER-EMPHASIZED.

A WRITER in a recent issue of an educational publication laments the "tendency to over-emphasize vocational education." He likewise deplores the "attempt of vocational education to dominate the field of education."

This man lives in a state where there is not a single vocational school, where the public schools have thus far not attempted genuine vocational courses, and where almost no encouragement in an official way has been given to vocational work.

The first alarm sounded is but the unreasoned fear of a reactionary classicist who knows nothing of the real purposes or content of vocational courses. Such a person lives in the dead past and wallows in the lore of forgotten legend, not concerning himself meanwhile with the pressing problems of unnumbered failures, misfits, unfortunates for whom the schools without vocational education have done but little or nothing. So when the modern program is proposed of doing simple justice to these so long neglected and untouched by the classical high school, the reactionaries raise their pious hands in holy horror lest "the vocational be over-emphasized." *Note that they never raised any cry of alarm so long as the classic regime was "over-emphasized" to the utter exclusion of vocational work and to the utter ruin of thousands of lives!*

With reference to the second fear that "vocational education is striving for dominance," it is only necessary to point out that no recognized vocational advocate has ever sought the dominance of vocational education over the schools. The leaders of this movement have persistently maintained that *vocational education should have a recognized place in the curriculum along side of other vital factors.* Such leaders have had a splendid vision of thousands of boys and girls annually held in school by the attraction of vocational courses. Hence they have not

assumed that the introduction of vocational work necessarily meant a reduction of other lines of work offered. Their main argument has not been so much for *substitution* of vocational work for traditional courses as it has been for the offering of wider fields of opportunity, of new and richer avenues of achievement, of a surer and closer contact with life and the world of affairs, all of which would appeal in a variety of ways to the heterogeneous tastes, capacities, and necessities of our people.

Wherefore, we are led to observe that those who desire to discuss vocational education should at least find out what it means and what the recognized leaders of the movement propose, before breaking into print with absurd and alarming prognostics.

#### "DANGERS" OF THE SMITH-HUGHES LAW.

THERE is a good deal of loose talk among school men concerning the "dangers" of the Smith-Hughes law. Without claiming perfection for the law, it seems worth while to call attention to a few very elementary facts the possession of which would save such people from nervousness and from ridiculous fears volubly expressed. The following facts are important to remember in any discussion of this law:

1. For vocational education to receive federal aid under the Smith-Hughes law, it must be for the common, wage-earning employments.

2. Federal aid is not given for academic instruction. As we view it, this does not discriminate against academic instruction or minimize its importance. It simply assumes that facilities for such instruction are already amply provided and that it can be properly given without further emphasis or aid from the national government.

3. The Smith-Hughes law provides for the following three main groups of people:

- a. Boys and girls over 14 years of age *who have already selected their vocations* and who desire preparation to enter such vocations as trained wage-earners.

- b. Boys and girls *who have already left school* and taken up wage-earning employment and who desire to *come back to school* to increase their efficiency in the work.

- c. Wage earners already established in their occupations who desire thoro special training to advance to positions of greater importance and responsibility.

It is clear, therefore, that two of the three groups for whom this law provides, have already left school and by this provision *are brought back into school* for additional training. The only group in the school contemplated in this law, is made up of boys and girls *who have already selected their vocations* and who by this token are *expecting to leave school* for wage-earning employment.

Hence, it would seem a rather far-fetched cry to sound an alarm that the whole educational sys-

tem is to be wholly vocationalized by this law. This arrangement will very materially prolong the school life of multitudes of boys and girls. It will make possible a greater amount even of academic education, because part of the time must be devoted to related academic work. But it will give to such education a purpose and an emphasis that will take it out of the realm of drudgery and routine and make of it a vital, living thing.

#### MAY IT, OR MAY IT NOT? WATSON, CALL THE PROFESSOR OF PEDAGESE.

THE following classic example of modern ingrowing pedagese appears in an article in the current number of *School and Home Education*:

"May not a tincture of Latin—not a facile reading knowledge of the vast Latin literature, but a few drops of Cicero and Horace—by a mystical structural rearrangement give hard intellectuality to soft minds? May not even a homeopathic dose of Greek evoke structures of flint in mentalities of wax? And may not mere sprinklings of the theory of equations and the theory of incommensurables—Plato said this knowledge differentiated men from pigs—impart fertility to mental soils exhausted by long racial thinking? A mixture of literature and formal science, by the same demonstrable alchemy, may raise the fusing point of the mind to degrees unapproached in temper by its flaccid constituents."

Replying to these modest requests for information, we humbly state that altho we confess to a "few drops of Cicero and Horace"—not a facile reading knowledge, etc.—and a few homeopathic doses of the other ingredients mentioned by this chum of Plato's, we admit that perhaps our minds did not furnish the proper condition for the mystical structural rearrangement of these "flaccid constituents." But answering the questions on the spur of the moment, we beg to say, "Yes, we think they may not."

#### VARIETY.

INDIVIDUALITY is the key-word in the vocabulary of the forceful personality. A man must be himself to be at his best. Uniformity and standardization build mighty machines—where the machine itself is the supreme object. But to build up a man, to make him greater, more able, more powerful, more honored, his individuality must be encouraged to develop. His clothes must express his personal taste, judgment, feeling—his real worth, his potentialities. The desire to select something that is different from that possessed by others is an instinct that begins in the very roots of human nature. It is in recognition of these facts that we have made exhaustive efforts to introduce variety into every line of merchandise. But mere variety may be useless unless each variation is based on some instinctive preference—unless the pattern or style or material answers to something in the man who is to own it.

# TRAINING THE ARMY MECHANICIANS

The training of mechanics and technical workers for the national army as undertaken by the Committee on Education and Training of the War Department, has developed into a vast vocational project of a kind that would have been deemed impossible even two years ago. At the present writing more than fifteen thousand men, it is estimated, are receiving intensive training and by September first, fully seventy-five thousand more will be engaged in the schools. The instruction which the men are receiving is built up on the principle of the short unit course and is intended to provide that information and skill which is peculiarly required for the army needs in the field and in the cantonments. Existing shops of technical and trade schools are being utilized and so far as possible the instruction corps are being utilized.

The organization of the special instruction is one of the distinct achievements of the American war preparations. Secretary Baker created the committee late in February and defined its functions as follows in a general order:

"To study the needs of the various branches of the service for skilled men and technicians; to determine how such needs shall be met, whether by selective draft, special training in educational institutions or otherwise; to secure the co-operation of the educational institutions of the country and to represent the War Department in its relations with such institutions; to administer such plan of special training in colleges and schools as may be adopted."

The committee is composed of three army officers and is headed by Colonel Robert I. Rees of the general staff. The executive secretary who has charge of the general administrative details is Mr. Wm. H. Lough. Mr. C. R. Dooley, formerly vocational manager of the General Electric Company, is educational director. The country has been divided into ten supervisory districts and over each has been placed an educator of broad experience in vocational education. Following are the district directors:

Maine, New Hampshire, Vermont, Massachusetts and Connecticut—A. L. Williston, Wentworth Institute, Boston, Mass.

New York, New Jersey, and Rhode Island—F. E. Matthewson, Jersey City, N. J.

Pennsylvania, Maryland, Delaware and part of Ohio—S. A. Zweibel, Division of Vocational Education, Bethlehem, Pa.

Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida—J. A. Pratt, Williamson Free Trade School, Williamson, Pa.

Michigan, Wisconsin, part of Illinois, part of Indiana, and part of Ohio—P. B. Woodworth, Chicago, Ill.

Mississippi, Alabama, Tennessee, Kentucky, part of Indiana, Illinois, Missouri, and Arkansas—R. W. Selvidge, Peabody College, Nashville, Tenn.

Minnesota, Iowa, Nebraska, South Dakota, North Dakota, part of Colorado, Kansas, Missouri, and Illinois—A. A. Potter, Kansas Agricultural College, Manhattan.

Texas, Oklahoma, part of Kansas, Missouri, Arkansas, and Louisiana—H. C. Givens, State Manual Training School, Pittsburg, Kans.

Oregon, Washington, Idaho, Montana, and Wyoming—Frank H. Shepherd, Oregon Agricultural College, Corvallis, Oregon.

California, Nevada, Utah, Arizona, New Mexico, part of Colorado—J. W. Addicott, San Francisco, Cal.

For the purpose of training these soldiers the War Department has decided to make use of facilities now in existence, thus offering the different educational centers an opportunity to perform an important public service, at the same time saving the cost of new schools and shops. A good part of the work is being performed between the fifteenth of May and the first of November so that there will be very little interference with the regular academic year of the respective institutions. At the present writing more than thirty schools are under contract and twenty schools have begun the instruction. The courses are for eight weeks' duration, and the final lot of 30,000 men will enter not later than September 6th.

The facilities of each of the schools are being used by successive contingents. All the men are enlisted soldiers under discipline and the respective institutions are required to conform to general stipulations of the War Department. The men are grouped in units of from one hundred to two thousand. Institutions like the University of Chicago, Lewis Institute, University of Wisconsin, Benson Polytechnic High School, Portland, Ore., Wentworth Institute, Boston, are being employed.

For effective military discipline the men are being housed and fed in dormitories or hotels furnished by the local authorities and in charge of the school where the training is being given. The government has required that a mess hall be a part of the quarters and that the latter be not more than twenty minutes' walk from the school.

Military drill is given in connection with the work. The men attend class eight hours daily, six days in each week. The local institutions which provide the training and arrange for the housing and feeding are compensated by the government at a per diem rate to cover only the actual cost incurred.

The courses of study in each of the institutions are the same as those outlined for the committee by the Federal Board of Vocational Education. The technical staff consists of the teachers of the school and these are under direct control of army officers who have been detailed for the work. The schools are given considerable latitude in adapting the courses to local conditions and to the specific needs of the work which the group is to undertake. In some of the communities special arrangements are being made with local industries for carrying on a part of the shopwork and for studying special processes and methods.

The men in the schools are national army men and while they are, in some cases, sent to the training centers directly from their homes, many of them have seen preliminary service in the cantonments. All of them are volunteers for the work. It is required that they shall have a common school education but this rule is not strictly adhered to. The men first go to a reservoir school at which their aptitudes and abilities are determined and from this they are sent to the school where they will be given their full training. Thus, machinists of special experience who will be able to act as aeroplane mechanics are being sent to one school. Men who are fitted for motor truck work are being sent to another, etc. The men are ranked as enlisted privates and are paid accordingly. The following courses are offered:

1. Automobile driving and repair—driving motor vehicles, making general repairs to motor trucks, Ford cars and motorcycles.

2. Bench woodwork—Splicing frames, joining, pattern making and fine woodwork.

3. General carpentry—Use of carpenter's tools and materials; practice in rapid rough work with hatchet and saw to qualify men for building and repairing barracks, erecting concrete forms, rough bridge work, etc.

4. Electrical communication—Construction and repair of telephone and telegraph lines; repair, adjustment and operation of telephone and telegraph apparatus; cable splicing.

5. Electrical work—Installing, operating and repair of electrical machines; inside wiring and power circuits.

6. Forging or blacksmithing—Jobbing, blacksmithing; motoreyle, automobile, truck, gas engine and wagon repairing.

7. Gas engine work—Reconstructing and repairing automobile, motoreyle and airplane engines.

8. Machine work—General machine shop work on lathe, drill press, shaper, planer, miller, grinder, etc.

9. Sheet metal work—Coppersmithing and tinsmithing; soldering, brazing and general repairing.

## INDUSTRIAL EDUCATION IN A SMALL CITY.

The Survey of Virginia, Minn.

A working program for the introduction of industrial education into the junior and senior high schools of Virginia, Minn., has been adopted by the board of education of the Virginia school district as the result of a survey extending



over a period of more than a year. The survey was undertaken by the professional heads of the school system and by a committee of the board, assisted by Mr. C. A. Prosser of the Federal Board of Vocational Education and Mr. H. W. Kavel, director of Dunwoody Institute, as expert advisers.

To carry the findings of the survey into effect, the board has already adopted plans for an addition to the high school building, and has reserved a large area in a new junior high school for vocational work.

The first finding which the commission made was that for a city of 12,000 like Virginia with varied industries and interests, a separate trade school is impracticable. The vocational training offered in the junior and senior high schools can, however, be made valuable to the students who go to work immediately after leaving school.

In making the industrial survey, employers of labor were consulted for co-operation and advice as to types of work, content of courses to be offered and methods of instruction to be followed. The survey commission considered metal trades, machine shop practice, forging, foundry work, plumbing and sheetmetal work. In addition, the building trades, electrical work, printing shops, lumber mills, automobile shops, agriculture, offices, telegraph offices, housekeeping, catering, dressmaking and millinery, laundry work and nursing were studied in connection with work which might be offered in the various industrial plants.

In making its decision, the committee recommended that the work both for boys and girls, be made as practical as possible and suited to the needs of the industries of the community. It was also suggested that a few trained teachers be employed to systematize the elementary work of the student and to give him a well-rounded education.

The committee recommended that the work be divided into two sections, namely, the experimental or try-out period to cover the seventh and eighth grades, during which the student takes ten weeks' work in eight different industries. At the end of the eighth grade, the student, together with the instructor and parent, are expected to decide what line of work to select and in which to begin training. For the remainder of the high school course the student specializes in the subject which he has selected.

In the grades it was recommended that the student give one and one-half hours per day to industrial work and in the trade course of the high school he should devote one-half his time to shopwork and the other half to academic subjects related to the trade. To make the work entirely successful it was suggested that the subject of vocational guidance be given considerable attention in order that the boy might be early set in the right way.

The survey indicated that the following types of work might well be introduced in the course of study: Electricity, plumbing, automobile work, wood industry, tin-smithing, painting, mining, printing, blacksmithing, concrete work, drafting, machine shop practice, salesmanship, office work, housekeeping, catering, nursing, millinery, dressmaking. The survey brought out very clearly that something had been lacking in the school system and that the students lacked perseverance and a sense of humility regarding their own value and ability. It was felt that a better spirit should be created toward work and a higher regard developed for responsibility and loyalty.

The survey revealed that the twenty leading industries studied by the committee had need of help and that skilled workmen were difficult to obtain. This field comprised both the constant and variable occupations in the city and showed a healthy demand on the part of the community for workmen who are trained for definite trades. Among these are the following:

*Carpentry*—First-class carpenters are in great demand and there exists a need for men thoroly trained in drawing and reading specifications, estimating, accuracy and general education.

*Foundry work*—This subject is recommended as a supplementary course to the metal trade. There is a demand for workmen and the supply is limited. The cost of equipment is nominal and the same floor space can be used at various times during the year with other trades.

*Automobile work*—A course in automobile care and repairing is especially desired by garage men and automobile owners. The field is large and there is a shortage of skilled help. In addition to performing manual labor in connection with the machines, it is essential that these men shall also instruct their customers in the proper care of their cars.

*Blacksmithing*—The demand for blacksmiths in special lines is fair. Men who perform the special iron and steel work about the mines and those who understand automobile forging are especially desired. There are no unions regulating conditions in the trade and the wage ranges from 45 to 50 cents per hour.

*Machine shop practice*—The demand for machinists does not seem to be as great as in some other lines but there is a fair need of men for general machine shop work. As a training in accuracy and skill it is suggested that a machine shop course is of great value as a school course.

*Painting*—The field of painting is much in need of skilled workmen due to the elimination of the apprenticeship system and the shortage of skilled labor in the local market. The average salary is 50 cents an hour with a maximum of \$6 for nine hours' work, and good chances for advancement.

*Sheet Metal*—The sheet metal trades are constantly branching out into new types of work and there is a demand for men, especially to draft patterns and to lay out work. The average salary is 50 cents an hour with a maximum of about \$1 an hour and good chances of advancement.

*Printing*—Printing shops on the Range are operated as union shops and governed by rules laid down under the apprenticeship system. Local unions have been urged to provide better facilities and to co-operate in the training of apprentices in order to meet the great demand for skilled printers. Good printers are paid as high as \$5 per day and are extremely difficult to obtain.

*Housekeeping*—A systematic course in housekeeping and management should become a part of every girl's general education. It is suggested that the course be made practical, that practical instructors be employed and that opportunity should be offered for specializing in catering, dressmaking, laundry work, office work, salesmanship and teaching. Materials made in the cooking classes can well be disposed of in the cafeteria, giving the students sufficient practice to become proficient and to eliminate cost of material.

*Office work*—The high school has a good foundation for a commercial course but it is urged that there be added the practical application of the knowledge to work such as is done in regular offices. There exists a great need for trained employes in this work and employers of clerical help are willing to co-operate in making the work a success.

*Plumbing*—This work can be successfully taught in schools provided sufficient time is given to the students. The plumbing trade pays good wages and there is a constant demand for men. Employers recognize their inability to train apprentices and welcome the introduction of a course in the schools.

*Telegraphy*—This field is calling continuously for skilled operators. Girls are rapidly taking up the work and prove themselves very valuable. The wages are attractive and the chance for advancement good.

*Electricity*—Workers in electricity are much in demand due to the rapidity with which the industries are becoming electrified. There is a demand for power operators, wire men and trouble chasers.

*Mining*—Mining offers a good field for the semi-skilled worker and mining men are anxious to have the course introduced in the schools.

#### THE RE-EDUCATION OF SOLDIERS.

The nature of the problem of vocational re-education of soldiers and sailors who are disabled in the course of the war was recently made clear by Dr. C. A. Prosser of the Federal Board of Vocational Education. In an address Dr. Prosser said:

"Figures compiled from the averages of all belligerents show that for every 1,000,000 men mobilized 10,000, or one per cent of them, each year would be proper subjects for vocational retraining. In two years this would be 20,000, three years 30,000, and so on. On the basis of an army of

5,000,000 men we would have 50,000 men per year who would need assistance and help in restoration and increase of their earning capacity, under the various classes of disability incurred.

"Of the 10,000 men out of the 1,000,000 fully fifty per cent will require medical rather than surgical care—men who have developed tuberculosis, heart trouble, kidney trouble and functional disorders. The other half of the 10,000 must have some sort of surgical attention. Of the 5000 surgical cases there will be, as the averages show us, ten per cent of dismemberment cases where there has been a leg or an arm lost, and of these 500 men 300 will have lost one or both legs and 200 will have lost one or both arms. The figures show an astonishingly small percentage of blindness. Out of the 41,000 men returned to Canada there were only twenty-seven blinded men.

"A study of these and other figures carries the conviction that this problem is by no means wholly that of the crippled or the maimed. It is a problem of the man who has a complication of troubles or injuries that, while surgical, do not amount to dismemberment, such, for instance, as a man with the muscles of an arm shot away, causing him to lose the use of his arm.

"With such a diversity of injuries, the work of re-educating these men becomes one which cannot be dealt with along broad general lines, but each man will require individual treatment, individual study of his case, individual training and individual efforts on his behalf in placement after he has been re-equipped to take up the broken threads of civilian life."

#### A PREVOCATIONAL COURSE IN POTTERY.

C. E. Githens, Superintendent of Schools,  
Wheeling, W. Va.

A course in Pottery was added to the manual training department of the Wheeling schools in September, 1917, at the direct request of the managements of the Wheeling pottery industry. The course is being developed by the director of manual training, Mr. W. G. Carpenter, because it is recognized that this type of prevocational work is especially valuable because of the local industries and is at the same time an ideal and inexpensive medium for hand and eye training and expression. It lays a foundation at the same time for the more purely vocational trend which the manual arts department is gradually assuming.

The course in pottery is offered at the present time to the boys enrolled in 8A and 8B and is to be introduced in the high school for those students who have shown a desire and a natural aptitude for the work.

Owing to the rapidly increasing development of the pottery industry, there is a great demand on the part of pottery manufacturers in the country surrounding Wheeling, for well trained men. The board of education realizes that



Some Typical Commercial Tea Pots, Sugars and Creamers made by the class.

a course in pottery is the most definite form of co-operation which the schools can give for accomplishing the distinct and definite purpose of the economical betterment of the community.

The schools have been fortunate in securing thru the efforts of Mr. C. E. Jackson, president of the Warwick China Company, the services of an experienced journeyman potter, Mr. Thomas Parker, as teacher of the pottery course. Mr. Parker was trained in England and has had experience in this country. He is not only a skilled commercial potter but possesses the necessary appreciation for an ability of developing the esthetic aspects of the course which are necessary to justify it as a prevocational study.

The work beginning in the eighth grade consists of making, during the first half of the school year, a creamer, sugar bowl, and tea pot, by the casting and pressing process. These, upon reaching the bisque stage, are decorated with simple original designs developed by the drawing teacher and a decorator from one of the local potteries. They are then placed in the kilns of the Warwick China Company for firing. When completed the articles made become the property of the individual pupils, who have the satisfaction not only of work well done, but of knowing that the work was exactly that of the pottery and that the ware made equals that found on the shelves of a china store. In fact, the models for these pieces are stock models and could be placed among the stock of the factory ware rooms with no discredit to the pupil workers.

The scientific basis of the trade and technical information concerning it are imparted to the boys by means of class lessons, lectures and demonstrations. The pupil thus gets general information regarding the industry which the modern factory with its highly specialized departments and its narrow apprenticeship fails to give its employees.

In the second half of the eighth grade the pupils work on the throwing wheels, turning lathes, jigger wheels, filter press, etc. In the meantime they are taken to the local plants and given as general an insight into the trade as is possible at this stage of their experience. They are encouraged to bring their parents to the classes to study the health conditions of the work and the opportunities the trade offers as a vocation.

This one year training provides a basis for vocational guidance of the individual pupil in selecting or rejecting this particular trade. This appeals to us as a very good basis for true vocational guidance. Altho we expect to make mistakes we are confident that with the fine spirit of co-operation existing among the school authorities, the factory officials and the allied trade unions, we shall be able to secure such results as will amply justify the introduction of the work in our school system.



THE CLASS AT WORK.

# PROBLEMS AND PROJECTS

The Department of Problems and Projects, which is a regular feature of the INDUSTRIAL-ARTS MAGAZINE, aims to present each month a wide variety of class and shop projects in the Industrial Arts.

Readers are invited to submit successful problems and projects. A brief description of constructed problems, not exceeding 250 words in length, should be accompanied by a good working drawing and a good photograph. The originals of the problems in drawing, design, etc., should be sent.

Problems in benchwork, machine shop practice, turning, patternmaking, sewing, millinery, forging, cooking, jewelry, bookbinding, basketry, pottery, leather work, cement work, foundry work, and other lines of industrial-arts work are desired for consideration.

Drawings and manuscripts should be addressed: The Editors, INDUSTRIAL-ARTS MAGAZINE, Milwaukee, Wis.

## A DRAWING INSTRUMENT CASE.

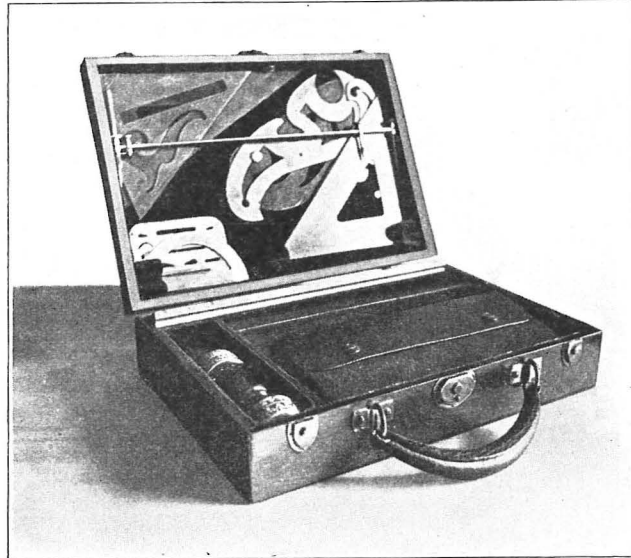
Earl D. Hay, Instructor, Industrial Department,  
Normal School, Oshkosh, Wis.

The accompanying drawing and photograph show a very convenient drawing instrument case which is not only useful for carrying one's tools but also as a depository for these tools, in which they may be kept in order and in place.

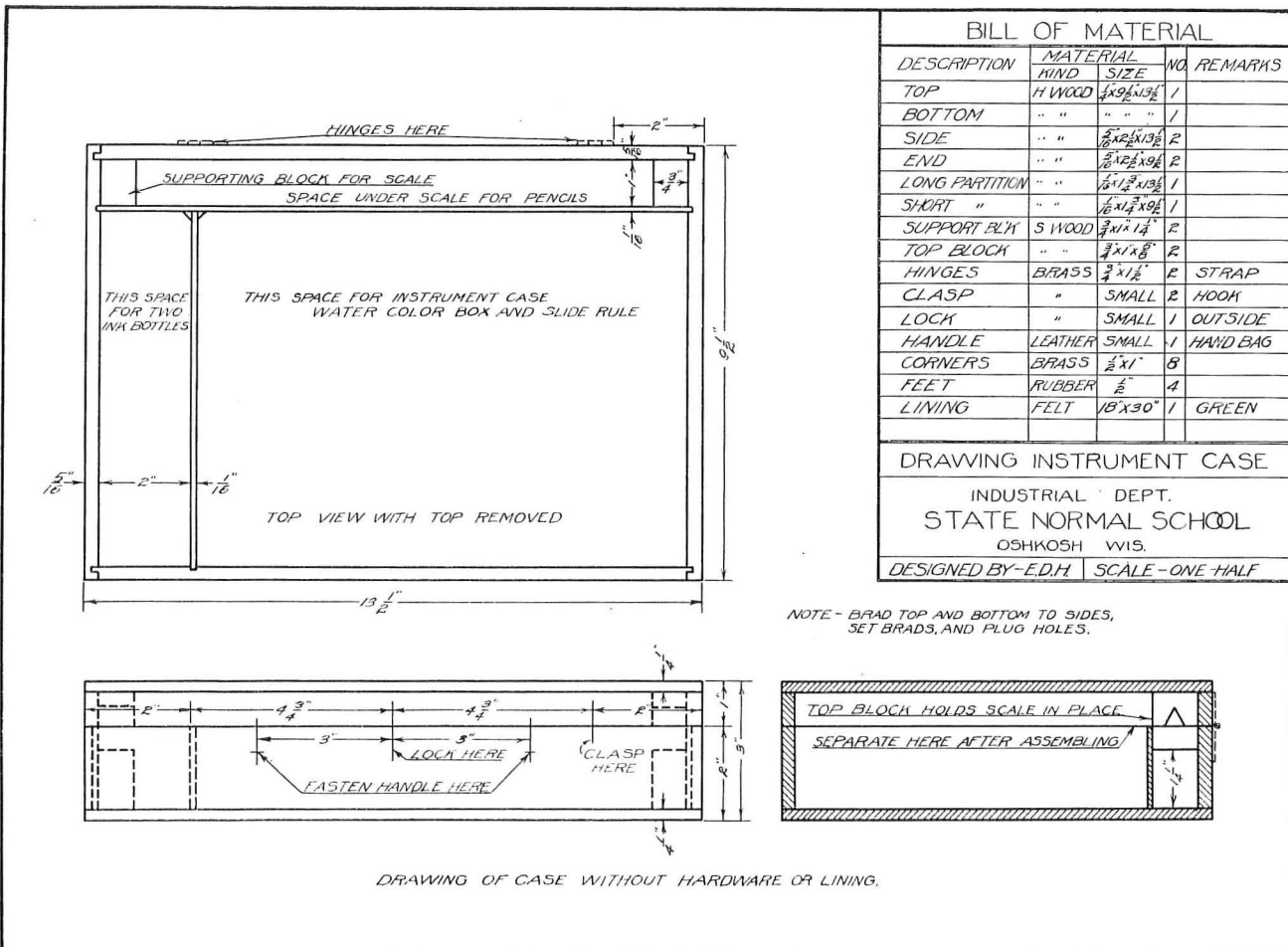
A variety of woods may be used for the case, depending on the finish desired. Especially desirable are quarter-sawed white oak, mahogany, birch, gum, or walnut.

The case is first glued up solid, and the outside surface is scraped and sanded. Then the cover is separated from the body by passing it over a fine circular saw. The partitions and blocks are next inserted, and the lining is glued in. The best material for the lining is green felt, altho some prefer green velour.

The hardware consists of a pair of ornamental brass strap hinges, a brass outside lock, a pair of traveling-bag clasps, a leather traveling-bag handle, eight brass corners and four rubber feet. The cost of all material usually runs from \$1.25 to \$1.50. The finished case costs five or six dollars on the market. Once used it becomes a necessity for the student and teacher alike. It is a project which the students all like to make and fits in well in the course in cabinet work.



Drawing Instrument Case.



DETAILS OF DRAWING INSTRUMENT CASE.





22½ feet in length are made of carefully selected maple flooring, with oak sides.

The joints in the maple flooring were broken and were all placed in the straight part of the slide, above the curve. The flooring was blind-nailed to the cleats and the entire surface worked down as smooth as possible. They were finished with hot linseed oil, then waxed.

In assembling, the tower and stair were first set up and the supports for the slides bolted on. The slides were next fastened at the top and bottom, then pulled down to the remaining supports to form the curve. The sides were then put in place and securely fastened together with rods and lag screws.

The cost of material was approximately \$70.

#### A POULTRY HOUSE PROJECT.

Percival Angove, Director of Manual Arts, Ionia, Mich.

The accompanying photographs illustrate a model of an open-front poultry house made by the writer's students in the Ionia High School during the past school year.

Farming is the predominate industry of Ionia and 38 per cent of the students enrolled in the high school are from the farming district. The project was constructed in the sophomore class of which exactly one-half was made up of sons of farmers whose intention it is to follow farming as a lifework.

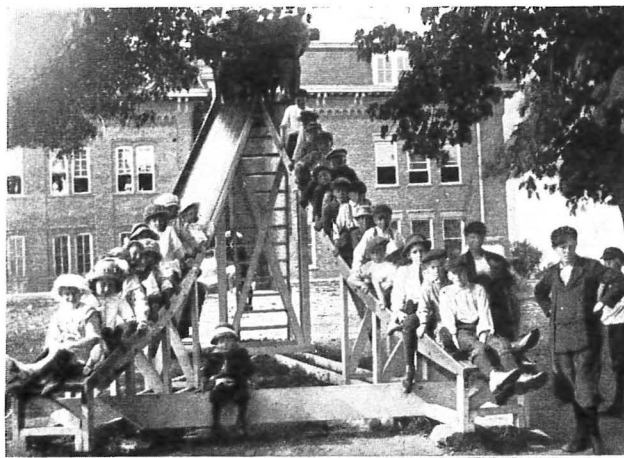
The drawings were made in the mechanical drawing class by a group of four boys who later built the model. Ideas for the drawings were obtained from magazines and from material supplied by the Michigan Agricultural College.

The foundation for the model was built of concrete and reinforced with wire to prevent it from cracking. Nails were driven into the form to hold the walls and the cement floor in place.

The students in making the model gave due attention to the problem of economy of materials in a full size house. The cost of the model was practically nil, because of the fact that orange boxes were used for the construction which was on a scale of two inches to the foot.

The photograph of the unfinished building shows the framework and the interior conveniences which were built in before the shiplap was put on. Parenthetically it might be noted that the shiplap was rabbeted by hand and offered a good problem in planing because of the thinness of the stock.

The roof was laid to scale and the whole building was given three coats of red barn paint and trimmed with white. The painting operation was utilized to teach the necessity



The Slide is Popular.

of preparing wooden surfaces, the mixing of paint, the application of paint, etc.

Each boy worked on a separate part of the model, except where the nature of the work called for the assistance of several.

Two of the four boys who worked on the project are planning to build similar houses on their father's farms during the summer.

#### ARM ROCKER.

Prof. Eldon L. Usry, Ohio State University,  
Columbus, O.

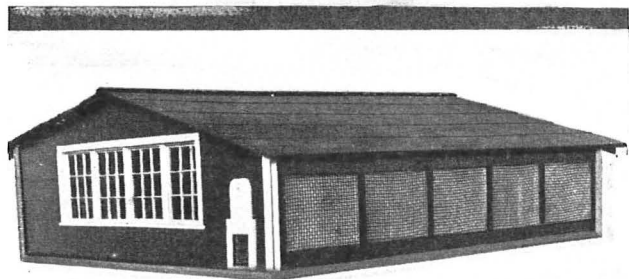
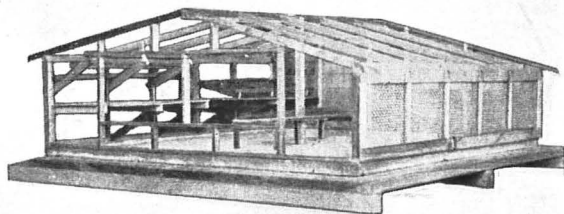
The rocker here shown is one of neat but simple design. It has been worked out and built in a school shop. The proportions and dimensions are correct. It has the proper hang or pitch, making it very comfortable.

The details in the drawing are few, as it is the intention that the student should use his own constructive powers with the help of the instructor in working out the details of construction. The only detail shown has proven so satisfactory a method of attaching the arm, that it is given here for the benefit of anyone who may wish to use it.

Material can be saved if when cutting out the rockers and back legs, advantage is taken of the curves. The bill of material shows the needed stock. If it is desired to make the back slightly concaved, it can easily be done.

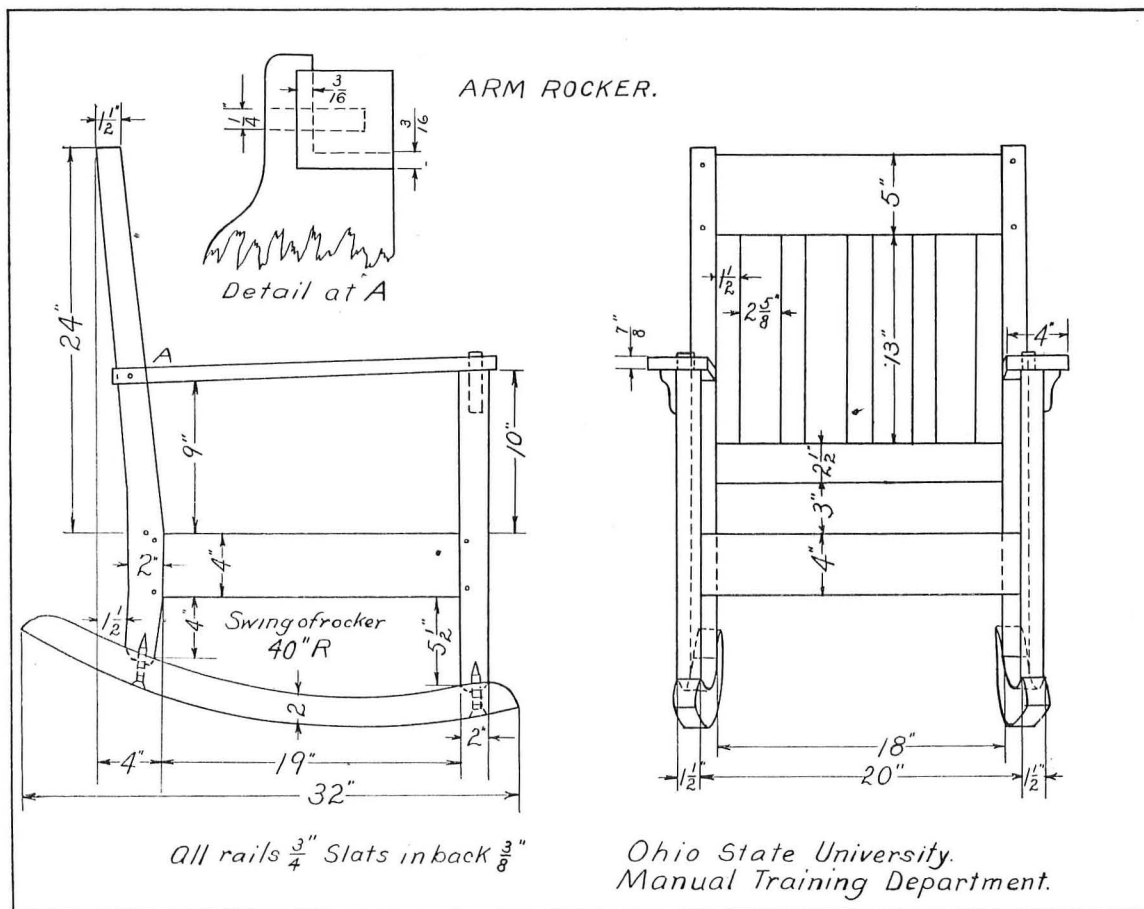
In construction, use the double shoulder tenon. The posts are made 1½"x2" for the purpose of strength. The front and back rails are not set in the middle, but ⅜" in from the front edge and also from the back edge in the back seat rail. The rails for the back are centered. No tenons are cut on the slats. A smoother and neater job can be done by running the slat in full size. Make the mortise about ½" deep for the slats and allow about ⅜", cutting the length of slats 13⅜".

The shape of the arms is left to the individual builder.



THE POULTRY HOUSE.

Above—Framing Completed; below—the Finished House.



DETAILS OF ARM ROCKER.

Ideas of design are different and hence no set design is offered.

The tenon setting into the rocker is but  $\frac{1}{2}$ " long, just sufficient to give support and depending on the wood screws to hold them on. A screw  $3\frac{1}{2}$ " No. 14 is satisfactory. This method has been used in the writer's shop for several years.

Dowels should be used when shown. A rocker is subjected to more rock and strain than any other kind of chair, so it needs to be strengthened where possible.

The general procedure of careful cutting and laying out is of course to be followed. Careful, accurate work will result in a very satisfactory chair.

#### Bill of Material.

- 2 pieces of  $1\frac{1}{2}$ "x7"x32"—Rockers.
- 1 piece of  $1\frac{1}{2}$ "x6"x32"—Back legs.
- 2 pieces of  $1\frac{1}{2}$ "x2"x21"—Front legs.
- 2 pieces of  $\frac{3}{4}$ "x4"x20 $\frac{1}{2}$ "—Side rails.
- 1 piece of  $\frac{3}{4}$ "x4"x21 $\frac{1}{2}$ "—Front rails.
- 1 piece of  $\frac{3}{4}$ "x4"x19 $\frac{1}{2}$ "—Back rail.
- 1 piece of  $\frac{3}{4}$ "x5"x19 $\frac{1}{2}$ "—Back rail.
- 1 piece of  $\frac{3}{4}$ "x2 $\frac{1}{2}$ "x19 $\frac{1}{2}$ "—Back rail.
- 2 pieces of  $\frac{7}{8}$ "x4"x25"—Arms.

#### SECOND ANNUAL MEETING OF THE VOCATIONAL AND ARTS ASSOCIATION OF NEW JERSEY.

The second annual meeting of the Vocational and Arts Association of New Jersey was held in the State Normal School, Trenton, N. J., on May 24th and 25th. About three hundred members from all parts of the state were in attendance at the meetings. The interest and enthusiasm shown by the members indicate that the association has become an effective agency in promoting a progressive spirit among the teachers of vocational, practical and fine arts subjects thruout the state.

Mr. Mathewson, president of the association, gave a very interesting talk on the work of the schools thruout the country in educating and training men, at government expense, to fit them to serve in army positions incident to many kinds of military service both at the front and behind the

lines. Mr. Mathewson has been placed in charge of this work by the government for New York, New Jersey, and Pennsylvania. He stated that ninety thousand men will have received this training before November.

Dr. Snedden of Teachers College, Columbia University, delivered the principal address. On his subject "In What Ways will the Schools Probably Recognize Vocational Activities After the War," he dwelt upon the importance of adjusting the school curriculum to meet the conditions that will face the country when peace is declared. He made a forceful plea for an education that will seek more efficient means of social betterment and aim to look to the child's culture, happiness, power and character. Teachers can do an immense amount to stimulate and help this development to the benefit not only of the student, but above all, to the community.

Following the lecture the members were given an opportunity of viewing the exhibit of drawings made by French children of Paris, brought to this country by Dr. John H. Finley, Commissioner of Education of New York.

The members met the following morning and after a short business meeting Mrs. Bertha Holly of New York, addressed the association on the topic, "Principles of Art in Dress." Mrs. Holly studied art in Paris for ten years and she is endeavoring to educate the American people to dress artistically. She stated that decorative art is the highest form of art and that art expression in the wearing apparel of the people is more worth while than painting on canvas. Art in dress does not follow the whims of fashion as simplicity and economy are its most essential characteristics. She illustrated her discussion by a number of dresses exhibited thru the aid of an assistant. A war gown formed an interesting feature of her exhibit.

At the conclusion of the address twelve group meetings were held in different rooms of the Normal School. A great deal of good has been accomplished by the exchange of ideas and discussion of problems at these departmental meetings.

The convention ended in the afternoon with a luncheon at the Hotel Sterling during which Dr. David B. Corson,



city superintendent of schools of Newark, delivered an address on "The American Outlook." Dr. Corson said that America had expressed her spirit in the past thru invention, scientific achievement, systems of transportation and particularly in the American newspaper. The real spirit of America in the future, he said, will be expressed thru the achievements of its schools. He pleaded for the development of purpose and sincerity in the character of the children of this country.

At the business meeting reports of committees were given and the following officers were elected for the ensuing year: President, Hugo B. Froehlich, Newark; vice-president, William R. Ward, Trenton; secretary, James E. Gaffney, Atlantic City; treasurer, Clifford E. Parsil, New Brunswick. —James E. Gaffney, Secretary.

#### WAR WORK IN THE PUBLIC SCHOOLS.

Kate A. McCloskey, Saratoga Springs, N. Y.

The organization of the Industrial Arts Department of Saratoga Springs, N. Y., consisting of about two thousand members, was a unit for action when called upon for war

the boys had learned to knit and the girls took their turn at writing to the men at the front.

The basis for the work of knitting was a six-inch square. These squares were formed into woolen covers for the wounded soldiers in the French hospitals. All the small quantities of beautifully colored yarns found in the homes and shops were used in making these afghans, which consisted of 63 squares sewed together with yarns of neutral tones. At a meeting of the Mothers' Club in January, thirty of these afghans were exhibited and there were as many more in the process of making. At present all woolen articles needed by our soldiers and sailors are expertly done by the pupils from the fifth grade thru the high school classes.

The intensive work for the society during this term has been advertising—the Third Liberty Loan and the War Saving Stamps. Every pupil designed posters of war activities. The morning of April 6th these posters were seen in the windows of every home and in every window of the school-houses. There was an exhibition of the posters from all the classes in a shop on the main street.



A FOURTH GRADE CLASS IN SARATOGA, N. Y. ENGAGED IN WAR WORK.

work last September. We had only to consider what lines were the best for us to follow.

No difficulty retarded the directing of the children's minds to the work of conserving our resources in order to help conquer our enemies; for the success of our struggles to overcome the enemies of the birds had taught us the value of conservation.

When we began organizing our branch of The Junior Red Cross we used this knowledge gained of making, saving, and giving for the benefit of the community for our introductory work and have increased our strength to meet the situation for assisting all humanity thru these sources.

But the work of a Junior Red Cross society includes many arts and of one we had little or no knowledge. The art of knitting must be learned, so we arranged that the girls would learn to knit while the boys would write to the men in service. That an interest in common would result we planned a prize for the best patriotic rhyme written by a pupil in the grades, and all children were to enter the contest.

At the end of the term the work had so developed that

Constantly we are meeting minor demands which we are obliged to accomplish the best we can immediately. But the work practiced by us is best summed up in the rhyme of a little girl in a fifth grade who was awarded the prize for the best poem.

#### "Four Ways to Help."

"Knit, knit, what shall I knit?  
Something warm for a soldier's kit.  
Sew, sew, what shall I sew?  
Something that to the Red Cross may go.  
Write, write, what shall I write?  
Just a line to a soldier and send it tonight.  
Eat, eat, what shall I eat?  
More potatoes and less of wheat."

—Eleanor Westfall.

The incorporation of a course of vocational training with universal military training is being considered by supporters of the plan in Congress. Sentiment has become quite favorable to the plan and the inclusion of the vocational feature in the curriculum of the military course is expected to add considerably to its support.

# NOW, ARE THERE ANY QUESTIONS?

*This department is intended for the convenience of subscribers who may have problems which trouble them. The editors will reply to questions, which they feel they can answer, and to other questions they will obtain replies from persons who are competent to answer. Letters must invariably be signed with full name of inquirer. All questions are numbered in the order of their receipt. If an answer is desired by mail, a stamped envelope should be enclosed. The privilege of printing any question and reply is reserved. Address, Industrial-Arts Magazine, Milwaukee, Wis.*

## Finishing a Rough Wall.

822. Q.—The concrete wall in the gymnasium was finished too rough when the schoolhouse was built last fall. What would be the best way that it could be given a smooth finish?—C. W. S.

A.—The best way? Well, that depends on a whole lot of things, especially in these costly war-time days. A certain method may be theoretically the best, but if you haven't the materials or the workmen at hand to carry it out, it isn't practically the best, by any means! So I'll suggest several different schemes and you can take your choice.

Naturally, the first idea would be to plaster it with a finish-coat of hard white lime-and-sand mortar; or, if likely to receive rough usage, a coat of Keene's cement. Probably the wall is partly below grade, so to stop moisture it must be painted with one of the dampproofing preparations that are on the market. Be careful to get some sort that is made for use underneath plaster, and will stay sticky or "tacky." I once specified a quick-drying paint and the plastering skidded off like a smooth-tired car on sleety asphalt.

However, plaster makes an awful mess of decent floors—and the manual training pupils aren't expert plasterers. Therefore, why not cover the rough concrete with wall-board? Strips of shingling lath, spaced about two feet on centers, can be clamped to the concrete with expansion bolts; over this furring, nail on the sheets of wall-board, and cover the joints with wood moulding. This will give you a mighty attractive paneled effect, at a small cost; and the boys can do the work, under your direction. A lot better training for them, than making bookcases—don't you think so? Instead of expansion bolts, you can drive hardwood plugs into holes drilled in the concrete, and nail the strips, hard and fast. If you prefer, 12-inch boards can be put on, instead of the wall-board; cover the joints with mouldings, stain the whole thing some dark mission tone, and you have an Old-English wainscot! I've used this scheme, more than once.

A cheaper and simpler way, however, would be to cover the wall with coarse burlap—just ordinary gunny-sack material—and paint this several coats. To make the fabric stick, smear the wall with a heavy dampproof paint; while still tacky, spread the burlap on and smooth it with a paper hanger's roller. If there is no risk of moisture, thick paste will answer in place of the dampproofing.

Some years ago I had occasion to design a basement billiard-room for one of my clients, so I put in concrete walls, dampproofed them, and then veneered the inside with a lining of picturesque, old-fashioned brick. These brick were set up on edge, and so gave the effect of 4" by 8' red tiles; of course, only about half as much material was required as a four-inch wall would have taken—William Draper Brinckloe.

## Cleaning Carborundum Wheels.

828. Q.—Will you please tell me how I may clean the pores of carborundum grinding wheels, that have become clogged with particles of steel?—E. L. Y

A.—The most practical method of cleaning carborundum wheels is to dress them, or grind them down until a clean even surface is obtained. This may be done easily by rotating the wheel at top speed and holding a piece of very coarse carborundum against it. A piece of a broken carborundum wheel will serve the purpose. If your wheels are very coarse it may be well to buy a Huntington dresser. The process of dressing is practically the same as with a piece of carborundum.

## Painting Toys.

829. Q.—What paints are best for painting wooden toys? Is any special treatment required for the wood before applying the paint?—B. T.

A.—I would suggest that the correspondent employ some form of dipping method as this is applicable to large or small quantities as the case may be, and does away with the necessity of using small brushes of fine material which are

costly and almost entirely out of the market at the present time.

If the inquirer will purchase some prepared oil wall paint, either in the flat or eggshell finish, she will have a material, in any tint she may desire, which may be purchased in quarts and which is heavy enough in body. For dipping purposes it should be reduced by an equal volume of turpentine. Be sure that the paint is thoroly stirred up from the bottom of the can.

In mixing paints which have stood for some time on the shelves in storage, it is best to pour off all of the top liquid into some other can. With a strong, smooth paddle thoroly work up the paste which remains in the can until it is smooth and free from lumps. By gradually adding the top liquid from the other can in small quantities and thoroly stirring each time, the paint will be rendered servicable much more quickly than is possible by any other method of hand mixing.

With the paint properly reduced and ready to use, the toys may be immersed in the paint when held from a wire. If the wire forms a hook on one end, it will be possible to hang up the toy until drained and dried. In removing the toy from the paint it should be drawn out very slowly so that the surface of the paint may be left as smooth as possible. In factory work these toys are packed in a wire basket with quarter-inch mesh and dipped into the paint and put on the drying racks. Of late years the larger toys have been sprayed altho the makers are still dipping rocking horses, go-carts and similar models. If the correspondent desires to get line effects for eyes, nose or ears, these may be lined in afterwards with an eighth-inch striping brush or sign painters' pencil.—Ralph G. Waring.

## Doing Our Bit in Manual Training.

833. Q.—Thru what general types of activities can manual training departments in elementary and high schools do their bit during the present war emergency?—H. W. C.

A.—The desire of manual training departments to be of direct service during the present war has manifested itself in a number of distinct lines of activity.

First, the departments have tried to produce articles that are of distinct war utility. These articles have included (a) furniture and fittings for Y. M. C. A. buildings and for the recreation buildings in army cantonments, (b) games and other articles for the personal use of soldiers, (c) interior furnishings and hospital equipment for the Red Cross, and (d) articles of furniture such as cutting and work tables, chairs, folding chairs, packing boxes, yarn winders, sock stretchers and other articles for the use of the local Red Cross chapters.

A second type of work has been in the direction of the manufacture of furniture and equipment for school use. The idea has been to make articles which cannot readily be bought in the market and the purpose has been to conserve labor and materials and to reduce the school expenditures which have grown enormously thru the increased cost of all labor and materials.

A third means of service has been the manufacture of simple devices and articles for local community use. In some cities the boys have put up signboards for war savings and Liberty Loan campaigns, they have built fences around war gardens and they have made garden markers, etc.

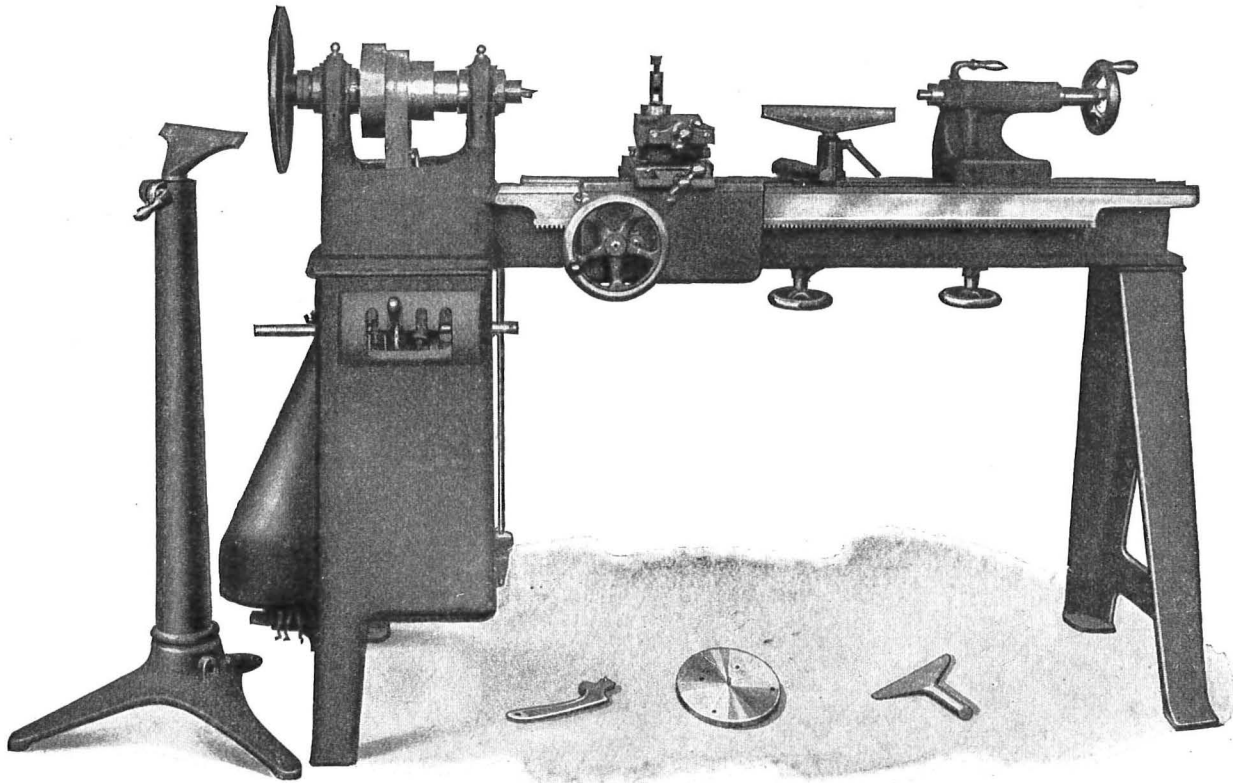
A fourth way in which the manual training department can do its bit is to make articles for Red Cross sales and for Christmas sales, the profits to be devoted to some form of war work. Under this head schools in many parts of the country have made thousands of puzzles, small toys and articles of furniture which they have sold to the local people at considerable profit. In some communities the boys have undertaken jobbing work, including the repair of chairs, caning, etc. The profits have been employed to buy war savings stamps or have been given to the Red Cross.

A glance thru the pages of *The Industrial-Arts Magazine* for the past year will give you some very concrete suggestions.

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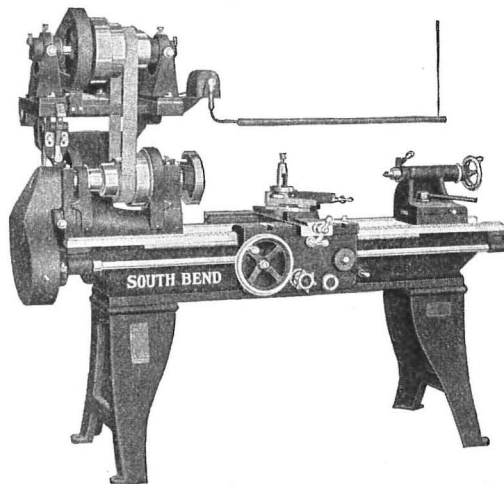
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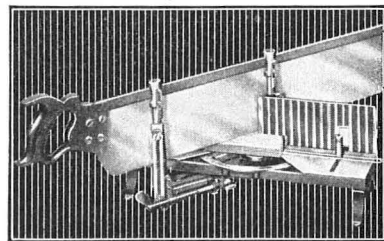
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### NEWS AND NOTES FROM THE FIELD.

*The Montana State College* offers special summer courses for women teachers who desire to fit themselves for work in manual training, agriculture and industrial subjects.

*Girl students* of Cleveland are to be given training in industrial work this summer at one of the grade buildings. It is planned to concentrate two of the schools at one central building.

*The Springfield Vocational School* at Springfield, Mass., recently sent out a group of twelve men from its teacher-training department who will be available for teaching positions in trade education classes.

*The Wyoming Director of Vocational Education* has reported that 24 classes in vocational work have been organized in seven or eight different towns since the opening of the vocational department in January last. The classes are as follows:

Cheyenne—Three evening-school classes in industrial subjects; three evening-school classes in home economics subjects; one evening class for conscripted men.

Douglas—Two evening-school classes in industrial subjects; two evening-school classes for conscripted men.

Kemmerer—One day-school class in home economics subjects.

Laramie—One evening-school class for conscripted men. Lander—One day-school class in agricultural subjects; one day-school class in industrial subjects.

Lovell—One day-school class in agricultural subjects. Sheridan—One day-school class in agricultural subjects; seven evening-school classes for conscripted men.

*Beginning August, 1918*, instructors and assistants in manual training in the Boston schools, who are employed for extra service in teaching manual arts, are to be paid for such service on an hourly basis, at the rate of one dollar and fifty cents per hour, but not more than that amount per day.

*The boys* of the Clark High School at Evansville, Ind., recently built a workshop for the manual training department, under the direction of A. M. Meeks, instructor.

*The New York City* board of education has established a Bureau of Vocational Activities which will have charge of the direction and supervision of technical, vocational, prevocational,

industrial and manual training classes. The new department is intended to eliminate wastefulness in the administration of industrial work. It has been found that some schools with expensive equipment are not used to maximum capacity while other schools are in need of just such training. High school work must be taken as an extension of elementary training and not as a duplication of former work. The entire work is to be in charge of Mr. William E. Grady, who is specially equipped by training and experience for this work.

*A summer vocational school* has been opened at Johnstown, Pa., for the benefit of boys who desire to make a choice of vocational work during the vacation period. Of an enrollment of 25 students, fifteen are taking machine shop practice, nine mechanical drawing and one pattern making. Under the direction of the instructor, the boys have turned out a great deal of metal work for the Cambria Steel Company. The company furnishes the raw material.

*A five-room domestic science cottage* is to be built this summer at Buffalo for the benefit of the domestic arts classes of the schools. Drafted men in training in the vocational school are to be utilized in its construction.

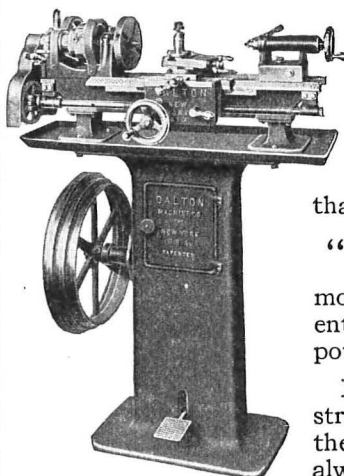
*The Ohio State Board* has made arrangements for a state-wide program for the training of teachers in trades and industries. The work is to be given at the University of Cincinnati, the Municipal University of Toledo and the Cleveland School of Education. Industrial teachers for the colored schools are to be trained in the normal and industrial departments at Wilberforce University. Plans have also been made for extending the scope of the emergency courses in war training for men of draft age.

*The Mound School*, Cleveland, Ohio, under the direction of the principal, has undertaken a practical course in home making in which both boys and girls participate. Boys are taught marketing, household budget making, cooking and general house management. Girls are taught the rudiments of simple carpentry fitting them for handling tools, and doing odd jobs around the home.

*A commercial high school* has been established at the Longwood School, Cleveland, O., as a war measure. Both boys and girls are eligible and the course includes secretarial work, book-

(Continued on Page XIX)

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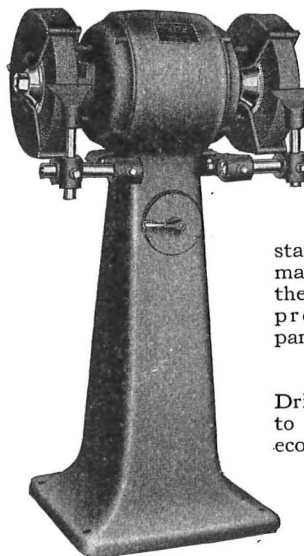
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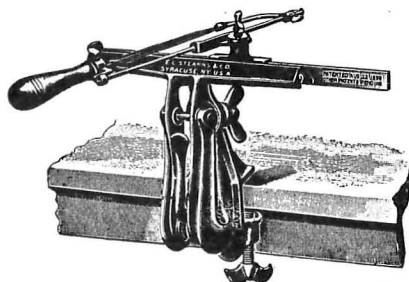
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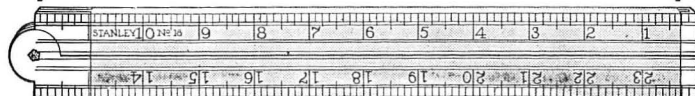
When considering Work Benches, Domestic Science Tables and other Industrial Equipment, conservative buyers are selecting

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Catalog No. 14, showing Manual Training,  
Catalogue No. 16, showing Domestic  
Science and Laboratory, sent on request.

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(Continued from Page XVII)

keeping, stenography and expert accounting. The work is in charge of Mr. H. A. Bathrick.

*Dressmaking*, salesmanship and millinery for women, carpentry, printing, cabinet making and machine shop work for men, are offered in a four-weeks' course at Shortridge High School, Indianapolis. The work is in charge of Mr. Edwin A. Lee and David J. MacDonald.

*New York, N. Y.* The board has made arrangements for the training of two thousand drafted men in trades essential to the prosecution of the war. Instruction is to be given in the technical high schools, trade and prevocational schools and the men will be housed, fed and taught under the supervision of the department of education.

The war department has made arrangements whereby male students in colleges and universities may remain in school until called to the colors. Beginning September, 1918, military instruction, under officers of the army, is to be provided in every institution of college grade enrolling for the instruction one hundred or more students over the age of 18 years. Enlistment will constitute the student a member of the army, liable to active duty at the call of the president. Students under 18 and not eligible for enlistment, will be encouraged to enroll in training units. The policy aims to develop as a military asset the large body of young men in colleges and also to prevent unnecessary and wasteful depletion of the colleges thru indiscriminate volunteering, by offering the students definite and immediate military status.

*Pupils* graduating from the Boston high schools during the recent commencement exercises were interviewed by the director of vocational guidance to assist them in the best possible choice of a vocation. According to the director, all students are encouraged to continue their education and to go on to college whenever possible. This is considered especially necessary now when labor is at a premium and strong inducements are made to young people to go to work.

*The Oregon Agricultural College catalog* for 1918-19 contains the announcement of the organization of a School of Vocational Education in that college. The school is unique in the fact that at this time it is believed that it is the only school of this kind in any college in the United States. The organization of the school was approved by the Board of Higher Curricula and was later passed upon by the members of the Board of Regents. The school is divided into the following departments: Vocational education, agricultural education, home economics education, trade and industrial education and commercial education.

The personnel of the school is as follows: E. D. Ressler, Dean of the School of Vocational Education, and Assistant Professor, J. F. Brumbaugh in the Department of Vocational Education; H. P. Barrows, Professor of Agricultural Education, and Walter Koenig, Assistant and Critic Teacher in Agriculture, in the Department of Agricultural Education; Dean Ava B. Milam, Professor Bertha Davis, Lura Keiser, Assistant and Critic Teacher and Barbara Moore, Assistant and Critic Teacher in the Department of Home Economics Education, Frank H. Shepherd, Associate Professor of Industrial Education, and A. R. Nichols in the Department of Industrial Education, and Elmer W. Hills, Instructor in Commercial Education and Office Training in the Department of Commercial Education.

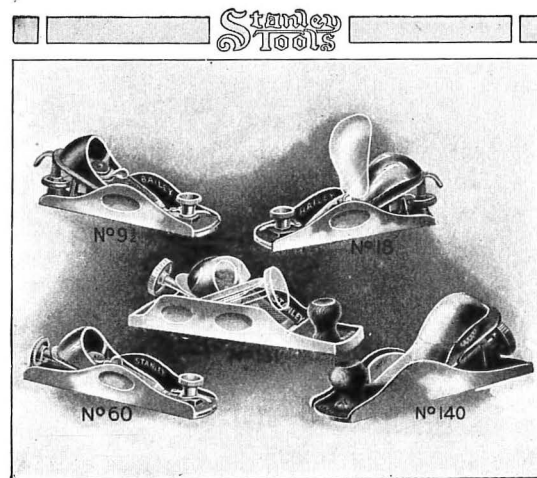
*At the Twentieth Annual School Art Exhibit* held at the University of Illinois recently, the Manual Training High School of Peoria was awarded the highest honors for its display of drawing and art work. The exhibit was the most comprehensive of the collections displayed by the thirty prominent high schools of the state.

*An exhibit* of the year's work in manual training was held during the early part of June at Lansing, Mich. Among the products displayed were basketry and chair work, and examples of chair caning.

*That ten years* of vocational training in the schools of Wheeling, W. Va., can produce marvelous results was demonstrated at the recent excellent exhibit of articles made by pupils in the high school. One of the interesting displays was the work in pottery, which was the first to be made. Examples of pottery throwing were given and hundreds of sets of china tea-sets, the work of the students of the department, were shown.

In the woodworking department, many excellent exhibits of pattern making, cedar chests, furniture and other woodcraft proved of interest. There were also exhibits of forging and welding, practical chemistry, domestic science and sewing.

*The boys* of the Johnstown Vocational School at Johnstown, Pa., recently assisted the state department in an emergency. Equipment was needed for the training camps for boys and the vocational schools were asked to assist in making the furniture. The Johnstown school turned out nine large dining tables and seats, complete and ready for shipment.



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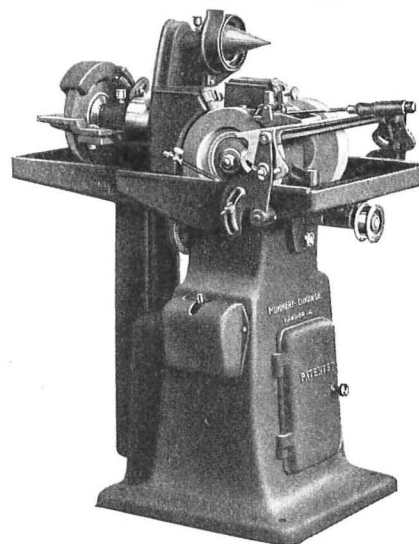
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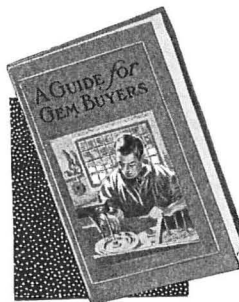
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New York

Two new buildings for vocational training have been started as additions to the Newman Manual Training School at New Orleans, La. The additions will provide accommodations for 180 additional students and will make possible the establishment of a commercial school.

Mr. E. U. Graff, superintendent of schools of Indianapolis, Ind., who recently addressed the thrift army, commercial classes and vocational pupils of the Arsenal Technical School, awarded the honors and certificates to the pupils in attendance. A gold star was given to Burt Longerich for selling \$5,000 worth of thrift stamps. Twenty-two high schools of the state were represented in a state typewriting contest, while thirty pupils received certificates after completing the two-year vocational courses.

Lane Technical High School, Chicago, held open house on June 17 and 18 to grammar school graduates and the public in its exhibition of work done in the different departments. The shops had a large exhibit of Red Cross hospital equipment including crutches, screens, bed trays and other devices. The boys of the machine shop showed samples of their work in miniature weapons of warfare, including naval guns, field artillery and a submarine.

The east side schools of Saginaw, Mich., during the week of June 13th, held their annual exhibit of manual training work. The exhibit was essentially a war-time display marked by conservation of necessities, usefulness of products and co-operation of departments. There were displays of mechanical drawing, pattern making, machine shop practice, foundry work, forge work and woodworking. The cooking classes showed war breads and canned goods, while the grades had exhibits of sewing and woodwork.

The school board of Fort Worth, Tex., has ordered that a vocational survey be made. Industrial plants, telegraph offices and department stores have been asked to assist in gathering information which can be used in establishing vocational courses.

A vocational training department was opened July 1st at the High School of Commerce, Omaha, Neb. The department has been opened in compliance with the Smith-Hughes law and provides for courses in printing, carpentry, automobile mechanics, mechanical drawing and household arts.

Foundation work has been begun on a vocational school to be conducted as a training school for the Remy Electric Company at Anderson, Ind. The building will be of steel, glass and brick and will cost, with equipment, about \$5,000.

The New York City board of education has leased to the War Department the ten-story Manhattan Trade School for Girls for use as a hospital for wounded soldiers. The building has two restaurants, a complete kitchen and will accommodate about five hundred beds.

The board of education of New York City has adopted regulations governing the qualifications of the new Director of Vocational Activities. They read:

"No person shall be eligible for election as Director of Vocational Activities who does not hold a degree in engineering granted by a college or university recognized by the University of the State of New York, together with ten years of satisfactory experience in teaching or supervision, provided not less than three years of such experience shall have been spent in supervising or teaching vocational classes."

Seventeen of the city high schools of New York City exhibited art work at the galleries of the Art Alliance during the week of June 3. The work came from both boys' and girls' classes and represented some attractive forms of applied design now being made in the art department of the high schools.

Washington Irving High School exhibited fine worsted embroidery; Eastern had interesting stenciled designs; Flushing had pierced metal work; Jamaica and Newtown showed samples of work in color as well as in pattern; Morris showed rich effects in wood-block printing on velvet; Stuyvesant had well made pieces of jewelry as well as wrought iron lanterns and door knockers; Girls' High School and Bryant High School illustrated half a dozen different crafts; Julia Richman had beautiful pieces of embroidery; Far Rockaway had several blouse forms ingeniously decorated with tie tying; eastern art in the form of Batik was shown at Bushwick, and Erasmus and Evander Childs had a large case of colored patterns and well stenciled painted and printed designs.

The exhibition was accompanied by a collection of one hundred posters made in competition for prizes offered by the Committees on the Prevention of Tuberculosis of New York and Brooklyn. The work was a credit to both students and teachers and indicated a very direct relation to the industrial needs of the community.



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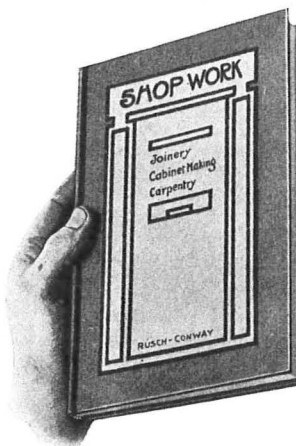
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INDIANAPOLIS

### THE WAR AND THE SCHOOLS.

The manual training department of the high school at Grand Forks, N. D., has completed two benches for the wards of the Red Cross hospitals in France. Eight of these benches were made by schools in Grand Forks County.

The manual training classes of Detroit, Mich., have made more than two thousand stocking stretchers which are to be given to the local chapter of the National League of Women's Service for knitting socks. It is planned next year to manufacture many articles for army hospitals.

All but one of the teachers in the manual training department at Hazleton, Pa., have been drafted into the National Army. The board plans to hire as many women as it can locate for the next term.

Classes to prepare Washington women to teach wage earning handicraft to disabled soldiers and sailors have been opened. The course includes weaving, block printing, basketry, toy making, bookbinding, net and bead work, rug making, stenciling, pottery, leather and metal work, and wood carving.

The University of Montana is planning to train five hundred soldiers in the war mechanics school which has been established by the war department. Large groups of soldiers are also being trained at Bozeman and Fort Missoula.

The boys of the manual training department at De Pere, Wis., have made taborets for the cantonments, cabinets for records of the local central war board, and a number of carts. The domestic arts department has made clothing for Belgian boys and girls.

The manual training department of the high school at Springfield, O., has completed twelve checker tables for the recreation department at Camp Sherman. The tables were made according to the specifications provided by the Washington officials.

The Vocational School at Green Bay, Wis., has organized a class in army cooking. Mr. Charles Garbet is instructor.

Attendance at vocational schools, especially at the shipbuilding schools in Bridgeport, Conn., has increased no less than 150 per cent, according to Mr. Frederick J. Trinder, state director of industrial education and special agent for war training in Connecticut. Drafted and enlisted men are eagerly enrolling

at the radio and buzzer schools established in cities in various parts of the state. A new trade school has been erected at Danbury and there are radio and buzzer schools in Bridgeport, Putnam, South Manchester, New Britain, Torrington, and Waterbury.

The most interesting and the most largely attended of the shipbuilding schools are those in Bridgeport. One school specializes in the construction of steel ships and one in wooden ships.

Eight hundred and seventy soldiers have entered upon a technical course in the high schools of Chicago. The work is under the direction of William Roberts, assistant in charge of evening and vocational schools.

Capt. J. R. Byers, of the Canadian Army Medical Corps, who addressed the National Tuberculosis Association at Boston during the month of June, gave his experience in the treatment of Canada's returned tubercular soldiers. Capt. Byers found that the change in environment and methods resulted in the dismissal of fifteen per cent for insubordination and the withdrawal of 33 per cent because of absolute dissatisfaction. Capt. Byers in attempting to solve the difficulty proposed that the treatment be along vocational lines. The results have been very successful, as indicated by the fact that insubordination has been reduced to two per cent and some patients have asked for extension of treatment to permit courses to be completed. Suitable vocational work permits each man's mind to be pleasantly occupied, soothes his nervous system and enhances his mental powers.

A vocational training school for wounded soldiers is to be conducted at Fort McPherson, Georgia, in connection with the large base hospital.

An interesting feature of the annual students' exhibition at the Maryland Institute at Baltimore, was the work by members of the class in marine draftmanship. The marine display included a number of intricate drawings and the profile of a model cargo ship of six thousand tons.

San Antonio, Tex. Training of men of draft age for service as radio and buzzer operators and military trades is to be undertaken by the public schools during the summer. Conscripted men from all occupations and professions are eligible provided they have the proper military qualifications.

The war cookery school of St. Louis recently graduated eighteen normal students and 400 women and girls who had completed the ordinary course prescribed and taught in the food substitute school. The diplomas were presented to the students by Miss Sarah Louise Arnold, expert in home economics.

The first class of mechanical draftsmen trained for work in the ordnance department was graduated early in June from the Boston Normal Art School. Experts from Washington were present to select from the class of thirty, men who are fitted for ordnance work.

Manual training and home economics has been extended in the Wheeling schools, it being required in all grades from 5B to first semester in the high school inclusive and three more centers for this work are to be equipped in different sections of the city. A sheet metal working department has been added and forging is to be installed in the high school for the colored pupils.

The University of Utah has entered into an arrangement with the war department for the training of men of draft age in mechanical lines. About 450 men are accommodated and the instruction is given by university teachers in mechanical arts and by government experts.

Stockton, Cal. A class in wireless telegraphy has been formed at the high school for the benefit of drafted men.

#### RESULTS OF WAR ACTIVITIES IN ROCKFORD, ILL.

The public schools of Rockford, Ill., have issued a report on the war activities carried on during the period up to and including June, 1918. The city schools have a one hundred per cent membership in the Junior Red Cross and 105 rural schools in the county have one hundred per cent memberships. The membership in Junior Red Cross work has reached 10,000, the money from this source and donations being available for the purchase of supplies. In every school one hour per day is given to Red Cross work which is divided between gauze work, sewing, woodwork, constructive work, art work, bookkeeping, and stenographic work.

The sewing and knitting work, which has been the largest part of the Junior Red Cross activities, has been taken up by both boys and girls. The list of materials completed and sent away includes clothing, quilts, infants' layettes, afghans and utility bags. Previous to organization of the work, the pupils made baby dresses, jackets and bonnets, shirts, quilts and knitted afghans. For the base hospital they made hospital bags, hot water bag covers, quilts, and hemmed curtains, napkins and table cloths, and for the soldiers they made gun wipes and pin holders.

In the woodworking classes, 50 benches were made for a hospital unit, ten Y. M. C. A. tables for a camp, 300 splints for the Red Cross, fifteen packing boxes and 1,200 needles for knitting classes. Work has begun on the furniture for a hostess house which has recently been erected.

The commercial classes undertook the bookkeeping and stenographic work for the Junior Red Cross and for the local headquarters. Additional printing was done by the school print shop.

The art department devoted its attention to the making of pocket memorandum pads, correspondence cases, checker boards, scrapbooks and posters for food conservation, Red Cross membership, garden clubs and war savings.

The garden clubs have a membership of 209 boys and girls between the ages of 10 and 18. Ten teachers will act as supervisors thruout the summer. Forty students of the high school, with special training in agriculture, left school early in April to engage in farmwork. All the students had finished their work and had passed their examinations.

Children in the grade schools have denied themselves to save money for thrift stamps. To date, \$19,770.62 have been invested in thrift stamps by the grade pupils while the high school students own or have sold thrift stamps to the amount of \$24,378.94. Boys in the manual training classes have made kites to be used as an advertising feature in the thrift stamp campaign. During the Third Liberty Loan campaign high school students sold bonds to the amount of \$346,450. The 320 teachers in the schools own bonds amounting to \$25,600 and more than 75 per cent of the teachers are subscribers to the Winnebago County Patriots' Fund, giving one per cent of their salaries for war relief.

Activities of a general character undertaken by the students include the collection of books for Camp Grant Library, a supply of tooth brushes for a local militia company, scrapbooks for the camp hospitals and the making of a vigorous fight against the barberry bush thruout the country. The work has been carried out thru the support and active co-operation of Supt. C. R. Reed.



# Printing

## as a method of teaching

# Spelling

SPELLING is largely a matter of memory: either eye-memory or ear-memory. Eye-memory is better than ear-memory. In fact, in the study of homonyms it is essential that the pupil possess eye-memory. Such homonyms as beat, beet; heel, heal; stake, steak, are usually confused when the pupil studies spelling by the sense of hearing: never does such confusion exist when spelling is learned by seeing the words in **printed** form.

Printing, being more concise and legible, has many advantages over writing in the teaching of spelling.

In order to show the advantages of printing over writing when teaching spelling, a comparison of the following columns is all that is necessary:

<i>type</i>	type
<i>impression</i>	impression
<i>separate</i>	separate
<i>presswork</i>	presswork

Every elementary and secondary school should possess a printing outfit to assist in the teaching of spelling.

EDUCATION



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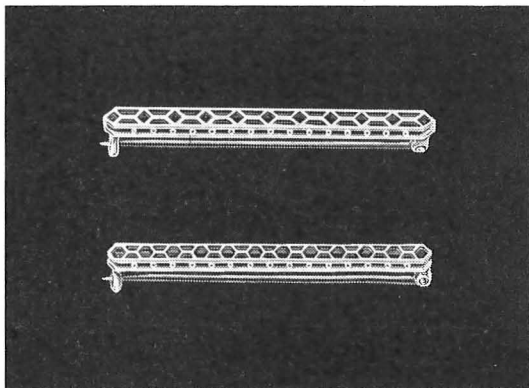
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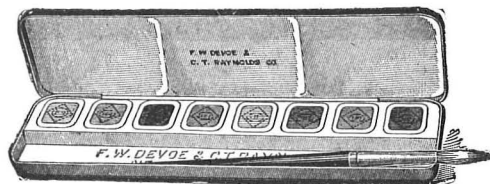
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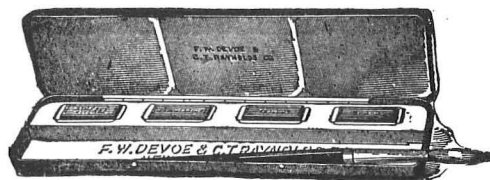
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## NEW BOOKS AND PAMPHLETS.

**Essentials of Drafting.**

By Carl L. Svensen. Cloth, 184 pages; illustrated. Price, \$1.50. D. Van Nostrand Company, New York.

While this book is developed along well-established lines, its value is to be found in its completeness, the usability of every topic which is touched upon and the clear appreciation of the needs of the student in evening and day technical and engineering schools. The author approaches the subject on the basis that drawing should be a tool of the technical man that he can use as easily and as masterfully as he can reading or writing. In the process of learning to draw he should absorb many principles of mechanics and many facts of the physical nature of materials, of mathematics, of machine design and of shop practice. At the same time his technique of drawing should be correct and natural so that he is not handicapped by the inefficiencies that characterize the self-made draftsman.

The book is so complete that any student who has once used it in the classroom will want it permanently for reference.

**Elements of Plumbing.**

By Samuel Edward Dibble. Cloth, 170 pages; illustrated. McGraw-Hill Book Company, New York.

With this volume in hand it would not be difficult for an intelligent journeyman plumber to teach efficiently the elements of his craft to any apprentice. In the hands of a teacher the study and practice of the fundamental processes and principles of the trade will be reduced to the easiest terms. The book begins with a brief sketch of the development of modern plumbing and then takes up in order the commonest operations thru to the most difficult problems of hot water installations, gas fitting, etc. The chief value of the book is its clearness and completeness. It is broad in offering methods of lead and iron work so that it may be used in practically any city of the United States. The book fills a distinct need in trade and continuation schools.

**Shop Problems in Sheet Metal.**

By Eugene C. Graham, Evansville, Ind. Paper, 35 pages. Published by the author.

This modest pamphlet constitutes an excellent text in a form of shopwork that is growing increasingly popular. The author has developed it as a result of several years of successful teaching. The book offers not only nineteen useful problems which are sufficient for one or two semesters of work but adds specific information on the trade, the materials used, machinery and tools, and the common processes. The book is the best we have seen.

*Annual Report of the Superintendent of Schools of New York City.* During the summer of 1916, part-time co-operative work has been carried on as in the previous summer. About 350 boys and girls were at work and the average weekly payroll amounted to \$1,615.57. The pamphlet discussed the late opening of schools, the Morris High School's co-operative work, conference of department store representatives, changes in assignments of co-ordinators, plans for reorganization, preparation of syllabi, cost of co-operative work, co-ordination of schoolwork with occupation in industry, obstacles in organization and management, attitude of pupils in regard to the work, and follow-up work.

*Conservation of Sugar.* Ernest Horn and Maude M. McBroom. Published by the University of Iowa, Iowa City, Ia.

*The Conifers of the Northern Rockies.* J. E. Kirkwood, University of Montana. Bulletin No. 53, 1917, U. S. Bureau of Education, Washington, D. C.

*Mold Loft and Shipfitting Course Scheme of Process for Apprentices in Practical Ship Construction.* State Trade Education Shop, Hartford, Conn. This pamphlet gives the course of study and a list of books to be consulted in connection with a course in shipbuilding.

*Principles and Policies in Home Economics Education.* Henrietta W. Calvin, Specialist in Home Economics, Bureau of Education, Washington. This pamphlet gives the scope of home economics education and outlines suitable courses and methods for schools.

*Problems of Administering the Federal Act for Vocational Education.* Bulletin No. 26, National Society for Vocational Education, New York City.

*Manual, Industrial and Prevocational Training for Boys, Cuyahoga Falls, O.* This pamphlet outlines the course of study in the Cuyahoga Falls schools covering a period of seven years. The work is co-ordinated with the bookwork so that industrial subjects are emphasized and much information gathered in the shop.

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This book presents a complete collection of problems for the three upper grades of the elementary school or for the junior high school. It forms the basic text for the upper-grade manual training courses in the Chicago schools where it has been used during the past year.

The author has given full expression in every problem to his wonderful versatility as a master teacher, workman, and designer. He has brought to bear many years of experience as a teacher and supervisor of manual arts, as a student and worker in wood, metal, splint, cane, rush, reed, and textiles, and as a designer of useful and artistic articles for the home and school. Every problem is new and novel and has been tested for practical utility, industrial and educational value, simplicity and economy and artistic merit.

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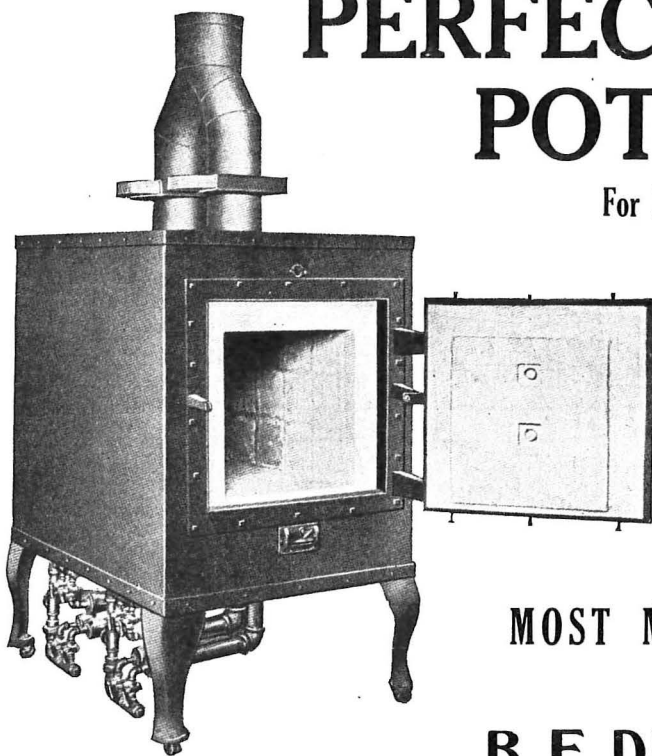
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## NEWS OF THE MANUFACTURERS

### SHEET METAL WORK AS A VOCATIONAL SUBJECT.

An impressive argument for sheet metal work as an industrial vocation and as a vocational subject for schools is contained in a pamphlet just issued by the Educational Department of the Peek, Stow and Wilcox Company, Southington, Conn. The pamphlet is made up of authoritative articles on various phases of sheet metal work, outlines of typical courses which are offered in leading schools, lists of schools where the subject is taught, lists of equipment, layouts of sheet metal shops, etc.

The information is of a type that is not easily obtained by supervisors of manual training and directors of trade schools without considerable study of widely scattered literature. Just four pages presented by Mr. W. H. Snyder, Jr., of Altoona, will illustrate the point. Mr. Snyder presents illustrations of articles made in his classes and appends a complete itemized statement of the cost of materials consumed in his shops. He shows what the boys paid for, what the night and day classes used respectively, what was bought and manufactured for the school district, etc. Incidentally he proves that the shop saved a hundred dollars in articles made for school use.

A copy of the pamphlet will be sent to any reader of the *Magazine* on request.

### MR. HOWLAND RETIRES.

Mr. Charles F. Howland, who has been president of Wadsworth, Howland & Co., Boston, since its incorporation, has resigned. Mr. Howland has been actively engaged in the paint trade since 1858 and is one of the oldest of the pioneer prepared paint manufacturers in the United States. He began his career as a color grinder at an annual wage of \$100 and was admitted to partnership in the firm of which he later became senior member, when only 22 years of age. In 1869 his name appeared in the firm's title for the first time.

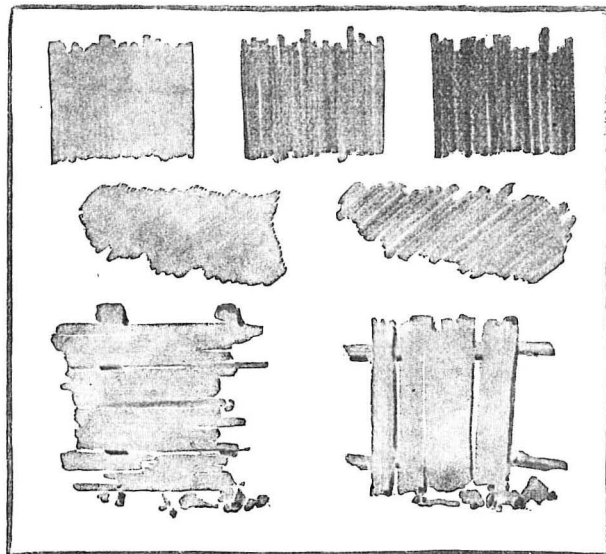
Mr. Howland is a descendant of John Howland, who came over in the Mayflower. He was born in Boston 77 years ago and resides at West Newton, where he has an extensive estate.

It was due to his interest in the development of a scientific color scale that the well known Munsell Color Chart and Color System was developed.

### PENCILS AND PENCIL SKETCHING.

It is a curious fact that a brief monograph on one phase or aspect of a subject is far more effective in impressing a reader or student than an equally able treatment in a complete work. This truth has been verified again in a recent pamphlet on Pencil Sketching by Harry W. Jacobs of Buffalo. The publishers of the booklet find repeated in hundreds of letters which have come to them from teachers, artists and draftsmen, the statement that the possibilities and the technique of pencil sketching had never impressed themselves so strongly as thru a study of this booklet.

The booklet is a gem of direct, forceful presentation of the fundamental methods of using pencils. It is made doubly effective by Mr. Jacobs' drawings and by the specific directions he has given for working and for choosing pencil grades. The accompanying illustration is one of the helpful cuts in the text.



Suggestions for Pencil Stroke Practice.



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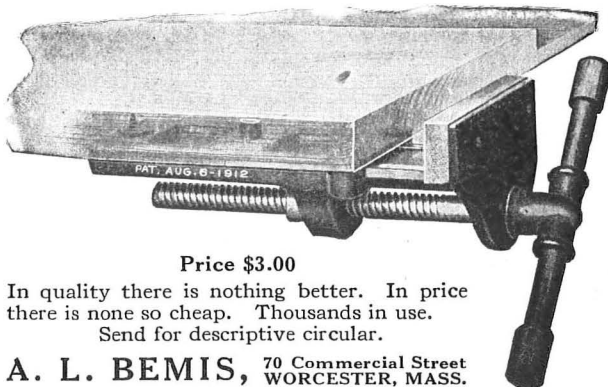
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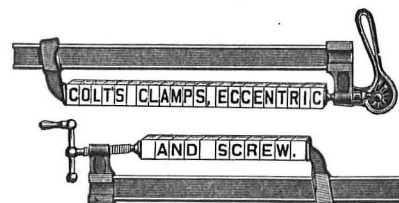
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It has been a cause of justifiable pride that American schools are equipped on the plane of excellence attained by the best industrial establishments. Schoolmasters who have this ideal in mind when equipping forge shops will be interested in a new catalog of the Buffalo Forge Co., in which are described the latest models of the well-known Buffalo Stationary Forges. The booklet illustrates and describes in detail half a dozen forges of the best type for school shops. These vary sufficiently in size, capacity, and cost to meet all needs of trade as well as manual training shops.

The Buffalo Forge Company will send any reader of the *Industrial-Arts Magazine* a copy of its new catalog of forges.

### CHICAGO MANUAL TRAINING TEACHERS MEET.

The Elementary Manual Training Club of Chicago held its annual meeting on June 7th. The club reported that it had raised over \$400 for Red Cross work thru the sales from articles made in the shops and sold at the clubrooms. The club has a service flag with sixteen stars and each of the men represented has been presented with knitted articles made by the women teachers of the club. At the meeting the club elected officers, reappointing for the fourth time the three men who have so successfully conducted the executive work of the club:

President, Fred G. Holmes; vice-president, Geo. Hicks; secretary-treasurer, Jos. W. Thompson.

A feature of the meeting was the address of Mr. Ernest E. Cole, assistant superintendent of the Chicago schools, on the subject "Post War Problems." Mr. Cole, in commenting on the economic war to follow the present world struggle, brought out very clearly that preparation for peace must be made on the basis of efficiency and this should reach all lines of endeavor and should find its final attainment thru education. Mr. Cole declared that the palm of industrial victory will go to the people whose hands are trained to perform operations in the industrial field, and this imposes on the schools the necessity of providing industrial and vocational training. He pointed out that there must be a change in present standards and values in education. The schools will be put to the test as they never have before and

they must rise to the occasion. To co-operate most effectively in the national crisis, the schools must become federal rather than state institutions, with a unity of purpose and standards. Mr. Cole pointed to the growing opportunities for women in every line of activity and urged that girls be trained for assuming the new duties which will be thrust upon them in the future.

In preparation for the school of tomorrow, Mr. Cole urges that more attention be paid to physical education. He showed that too many boys in school are turned out with little improvement in physical development and posture. He argued that a system of training be incorporated that shall reach all students to the end that the weak may be made equally as strong as the would-be athlete. "It would seem," said Mr. Cole, "that prevention is better than reclamation and prevention of defects should be the watchword of those in charge of physical training for boys and girls.

Mr. Cole quoted the slogan, "Make the world safe for democracy," and argued that the world will get only what it is prepared for. Illiteracy and democracy cannot exist together, he said, and education must prepare the way. He traced the beginning of democracy and emphasized that the present war is to test whether there shall be a ruling class and a serving class; whether government shall derive its powers from the governed or by heredity, thru a royal line of accession. The pledge of the United States is that the world shall have a new birth of freedom and that government of the people shall not perish from the earth.

#### PERSONAL NEWS NOTES.

Mr. J. F. Barnhart, of New Philadelphia, O., has resigned to accept a position at Salem.

Mr. William Castle has been elected a member of the board of industrial education at Oshkosh, Wis. He succeeds George P. Ransom.

Boyd Garns, instructor in manual training at Lanark, Ill., has been drafted into the National Army.

Fred E. Vandersloot and Oliver Osborne, of St. Joseph, Mo., have enlisted as mechanics in government service. They will be located during the summer at Nashville, Tenn., where a government plant is being erected.

Mayor Behrman, of New Orleans, La., has appointed George J. Glover, Douglas Anderson, Joseph Kohn, and Samuel Weis as members at large of the board of managers for the Delgado Vocational Training School. The other members of the board will be Mayor Behrman, Commissioner Lafaye, Supt. J. M. Gwinn, P. A. Capdau, president of the board, and one other person to be appointed.

A. F. Weigmann, of Decatur, Ill., has been called for the draft.

J. C. Wright, director of vocational education at Kansas City, Mo., has resigned in order to give his entire time to the field work for the Federal Council of Vocational Education. Mr. Wright is succeeded by Mr. Myron G. Burton.

R. D. Owens, of Salem, O., has enlisted in the army.

Mr. L. A. Emerson has been elected Supervisor of Industrial Education for the state of Maryland.

Miss Bessie Boyers, of Decatur, Ind., has entered upon a summer course at the University of California.

Mr. F. H. McCrea, head of the manual arts department of Southwestern University of Kansas, has resigned to become Supervisor of Manual Training at McKeesport, Pa.

Mr. George A. Jester has accepted a position as instructor of manual training in the high school at Madison, Wis. During the past three years, Mr. Jester has been instructor in the high school at Little Falls, Minn.

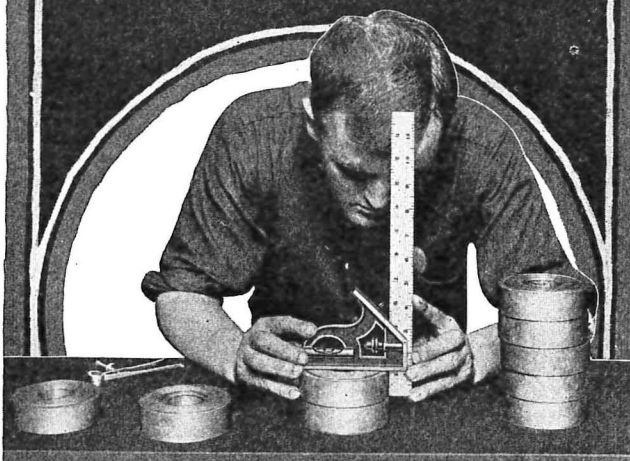
Mr. A. Edward Rhodes, head of the department of manual arts of the Wilmington, Delaware, high school, has been appointed superintendent of the war emergency schools at Wilmington. These schools contain classes for radio and buzzer operators, ship-fitters and mechanical draftsmen. A special class has also been organized to teach English to aliens.

Mr. F. B. Daily has resigned as director of manual arts at Ellensburg, Wash., to become head of the manual arts department at the Nebraska State Normal School, Peru, Neb. Mr. Daily succeeds F. C. Smith, who is in France as a Y. M. C. A. secretary.

During the past year Mr. Daily extended the manual arts work to the fifth and sixth grades and added forging and farm mechanics to the high school course.

Mr. Frank H. Shepherd has been re-elected by the Board of Regents of the Oregon State College, and has been given the title of professor of industrial education.

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